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PRECAUTIONS

PRECAUTIONS

[CAN]

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

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

WARNING:

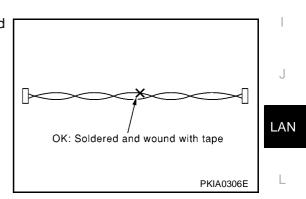
- To avoid rendering the SRS inoperative, which could increase the risk of personal injury or death in the event of a collision which would result in air bag inflation, all maintenance must be performed by an authorized NISSAN/INFINITI dealer.
- Improper maintenance, including incorrect removal and installation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

Precautions For Trouble Diagnosis CAN SYSTEM

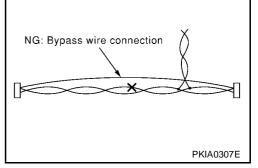
- Do not apply voltage of 7.0V or higher to the measurement terminals.
- Use the tester with its open terminal voltage being 7.0V or less.
- Be sure to turn ignition switch off and disconnect negative battery terminal before checking the circuit.

Precautions For Harness Repair CAN SYSTEM

• Solder the repaired parts, and wrap with tape. [Frays of twisted line must be within 110 mm (4.33 in)]



• Do not perform bypass wire connections for the repair parts.(The spliced wire will become separated and the characteristics of twisted line will be lost.)



EKS00409

EKS0040A

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Μ

CAN COMMUNICATION

System Description

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

CAN Communication Unit For LHD Models with Tyre Pressure Monitoring System

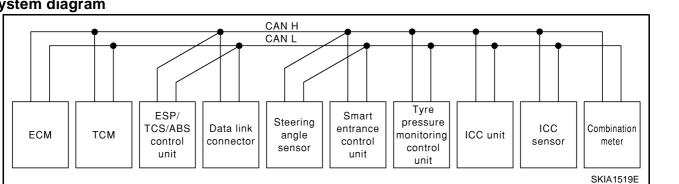
Go to CAN system, when selecting your car model from the following table.

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	E	SP	A	BS	ESP		AI	BS			
ICC system	Applica- ble				plicable						
		CAN communication unit									
ECM	×	×	×	×	×	×	×	×	×		
ТСМ	×	×	×	×							
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	<u>LAN-9,</u> <u>"TYPE 1"</u>	<u>LAN-10,</u> "TYPE 2"	<u>LAN-11,</u> "TYPE 3"	<u>LAN-12,</u> "TYPE 4"	<u>LAN-13,</u> "TYPE 5"	LAN-14, "TYPE 6"					
Can system Trouble diag- nosis	<u>LAN-36,</u> <u>"CAN</u> <u>SYS-</u> <u>TEM</u> (<u>TYPE</u> <u>1)</u> "	LAN-63, "CAN SYS- TEM (TYPE 2)"	<u>LAN-83,</u> <u>"CAN</u> <u>SYS-</u> <u>TEM</u> <u>(TYPE</u> <u>3)</u> "	LAN- 102, "CAN SYS- TEM (TYPE 4)"	LAN- 121, "CAN SYS- TEM (TYPE 5)"	LAN-1	38, "CAN S	YSTEM (TY	<u>′PE 6)"</u>		

[CAN]

EKS0040B

TYPE 1 System diagram



Input/output signal chart

T: Transmit R: Receive

Signals	ECM	тсм	ESP/ TCS / ABS control unit	Steer- ing angle sensor	Smart entranc e con- trol unit	Tyre pres- sure moni- toring control unit	ICC unit	ICC sensor	Combi- nation meter	F
Engine speed signal	Т	R	R				R		R	
Accelerator pedal position signal	Т	R	R				R			Н
Closed throttle position signal	Т						R			
ICC steering switch signal	Т						R			
Shift pattern signal		Т					R			
Parking brake switch signal			Т				R			
ICC system display signal							Т		R	
ICC sensor signal							R	Т		J
ESP operation signal	R		Т				R			
TCS operation signal	R		Т				R			LAN
ABS operation signal	R	R	т				R			
Stop lamp switch signal		R	Т							
Steering wheel angle sensor signal			R	т						L
Wheel speed sensor signal			Т				R			
Rear window defogger signal	R				Т					M
Heater fan switch signal	R								Т	
Air conditioner switch signal	R								Т	
Primary pulley revolution signal	R	Т					R			
Secondary pulley revolution signal	R	Т					R			
ICC operation signal	R						Т			
Brake switch signal	R						Т			
MI signal	Т								R	
Current gear position signal		Т							R	
Engine coolant temperature signal	Т						R		R	
Fuel consumption signal	Т								R	
Makiala ana ad sino d			т						R	
Vehicle speed signal	R								Т	
Seat belt reminder signal					R				Т	

[CAN]

В

С

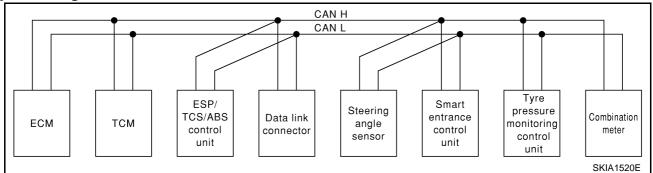
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Signals	ECM	ТСМ	ESP/ TCS / ABS control unit	Steer- ing angle sensor	Smart entranc e con- trol unit	Tyre pres- sure moni- toring control unit	ICC unit	ICC sensor	Combi- nation meter
Headlamp switch signal					Т				R
Flashing indicator signal					Т				R
Engine cooling fan speed signal	Т				R				
Child lock indicator signal					Т				R
Door switches state signal					Т				R
Kay ID signal	R				т				
Key ID signal	Т				R				
A/C compressor signal	Т				R				
Tire pressure signal						Т			R

TYPE 2 System diagram



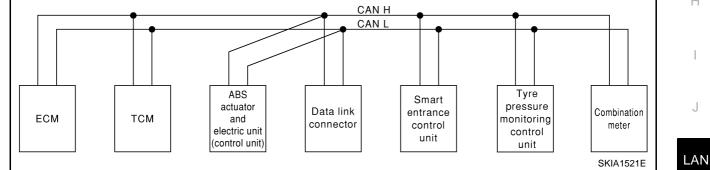
Input/output signal chart

						T: Transmit	R: Receive
Signals	ECM	тсм	ESP/TCS / ABS con- trol unit	Steering angle sen- sor	Smart entrance control unit	Tyre pres- sure moni- toring control unit	Combina- tion meter
Engine speed signal	Т	R	R				R
Accelerator pedal position signal	Т	R	R				
ESP operation signal	R		Т				
TCS operation signal	R		Т				
ABS operation signal	R	R	Т				
Stop lamp switch signal		R	Т				
Steering wheel angle sensor signal			R	Т			
Rear window defogger signal	R				Т		
Heater fan switch signal	R						Т
Air conditioner switch signal	R						Т
Primary pulley revolution signal	R	Т					
Secondary pulley revolution signal	R	Т					
MI signal	Т						R
Current gear position signal		Т					R
Engine coolant temperature signal	Т						R

Signals	ECM	ТСМ	ESP/TCS / ABS con- trol unit	Steering angle sen- sor	Smart entrance control unit	Tyre pres- sure moni- toring control unit	Combina- tion meter
Fuel consumption signal	Т						R
Vehiele speed signal			Т				R
Vehicle speed signal	R						Т
Seat belt reminder signal					R		Т
Headlamp switch signal					Т		R
Flashing indicator signal					Т		R
Engine cooling fan speed signal	т				R		
Child lock indicator signal					Т		R
Door switches state signal					Т		R
Key ID sized	R				Т		
Key ID signal	Т				R		
A/C compressor signal	Т				R		
Tire pressure signal						Т	R

TYPE 3

System diagram



Input/output signal chart

		1				III R. Receive
Signals	ECM	ТСМ	ABS actua- tor and elec- tric unit (control unit)	Smart entrance control unit	Tyre pres- sure moni- toring control unit	Combina- tion meter
Engine speed signal	Т	R				R
Stop lamp switch signal		R	Т			
Rear window defogger signal	R			Т		
Heater fan switch signal	R					Т
Air conditioner switch signal	R					Т
Primary pulley revolution signal	R	Т				
Secondary pulley revolution signal	R	Т				
MI signal	Т					R
Current gear position signal		Т				R
Engine coolant temperature signal	Т					R
Fuel consumption signal	Т					R
			Т			R
Vehicle speed signal	R					Т

LAN-11

T: Transmit R: Receive

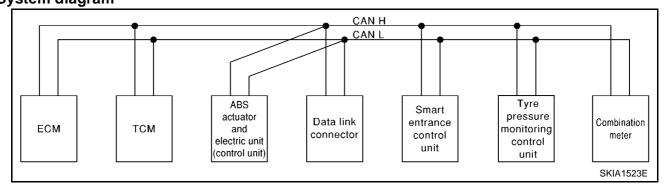
[CAN]

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J

Signals	ECM	ТСМ	ABS actua- tor and elec- tric unit (control unit)	Smart entrance control unit	Tyre pres- sure moni- toring control unit	Combina- tion meter
Seat belt reminder signal				R		Т
Headlamp switch signal				Т		R
Flashing indicator signal				Т		R
Engine cooling fan speed signal	Т			R		
Child lock indicator signal				Т		R
Door switches state signal				Т		R
Key ID signal	R			Т		
Key iD signal	Т			R		
A/C compressor signal	Т			R		
Tire pressure signal					Т	R

TYPE 4 System diagram

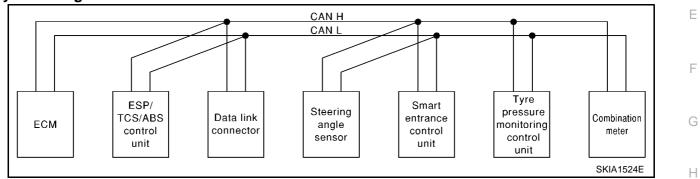


Input/output signal chart

Signals	ECM	ТСМ	ABS actua- tor and electric unit (control unit)	Smart entrance control unit	Tyre pres- sure moni- toring control unit	Combina- tion meter
Engine speed signal	Т	R				R
Stop lamp switch signal		R	Т			
Rear window defogger signal	R			Т		
Heater fan switch signal	R					Т
Air conditioner switch signal	R					Т
MI signal	Т					R
Current gear position signal		Т				R
Engine coolant temperature signal	Т					R
Fuel consumption signal	Т					R
Vehicle anecd signal			Т			R
Vehicle speed signal	R					Т
Seat belt reminder signal				R		Т
Headlamp switch signal				Т		R
Flashing indicator signal				Т		R
Engine cooling fan speed signal	Т			R		
Child lock indicator signal				Т		R

Signals	ECM	ТСМ	ABS actua- tor and electric unit (control unit)	Smart entrance control unit	Tyre pres- sure moni- toring control unit	Combina- tion meter	
Door switches state signal				Т		R	1
	R			Т			
Key ID signal	Т			R			(
A/C compressor signal	Т			R			
Tire pressure signal					Т	R	

TYPE 5 System diagram



Input/output signal chart

Signals	ECM	ESP/ TCS / ABS control unit	Steering angle sen- sor	Smart entrance control unit	Tyre pres- sure moni- toring control unit	Combina- tion meter	
Engine speed signal	Т	R				R	0
Accelerator pedal position signal	Т	R					-
ESP operation signal	R	Т					LAN
TCS operation signal	R	Т					-
ABS operation signal	R	Т					-
Steering wheel angle sensor signal		R	Т				L
Rear window defogger signal	R			Т			-
Heater fan switch signal	R					Т	M
Air conditioner switch signal	R					Т	-
MI signal	Т					R	-
Engine coolant temperature signal	Т					R	-
Fuel consumption signal	Т					R	-
Vehicle anod signal		Т				R	-
Vehicle speed signal	R					Т	-
Seat belt reminder signal				R		Т	-
Headlamp switch signal				Т		R	-
Flashing indicator signal				Т		R	-
Engine cooling fan speed signal	Т			R			-
Child lock indicator signal				Т		R	-
Door switches state signal				Т		R	-

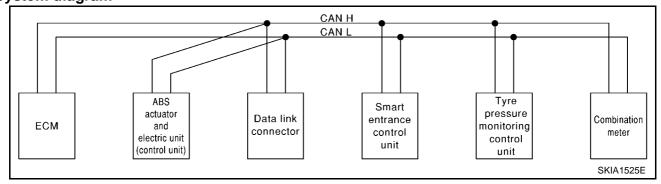
T: Transmit R: Receive

Ν

[CAN]

Signals	ECM	ESP/ TCS / ABS control unit	Steering angle sen- sor	Smart entrance control unit	Tyre pres- sure moni- toring control unit	Combina- tion meter
Key ID signal	R			Т		
	Т			R		
A/C compressor signal	Т			R		
Tire pressure signal					Т	R

TYPE 6 System diagram



Input/output signal chart

inputoutput signal chart				T: Trans	mit R: Receive
Signals	ECM	ABS actuator and electric unit (control unit)	Smart entrance con- trol unit	Tyre pres- sure monitor- ing control unit	Combination meter
Engine speed signal	Т				R
Rear window defogger signal	R*1		Т		
Heater fan switch signal	R*1				Т
Air conditioner switch signal	R				Т
MI signal	Т				R
Glow lamp signal ^{*2}	Т				R
Engine coolant temperature signal	Т				R
Fuel consumption signal	Т				R
Vehicle append signal		Т			R
Vehicle speed signal	R				Т
Seat belt reminder signal			R		Т
Headlamp switch signal			Т		R
Flashing indicator signal			Т		R
Engine cooling fan speed signal	Т		R		
Child lock indicator signal			т		R
Door switches state signal			Т		R
Key ID signal	R		Т		
	Т		R		
A/C compressor signal	Т		R		
Tire pressure signal				Т	R

*1: Except YD22DDTi engine model

*2: YD22DDTi engine model only

LAN-14

[CAN]

А

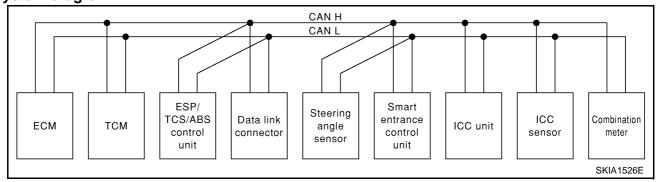
CAN Communication Unit For LHD Models without Tyre Pressure Monitoring System

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

Body type				5	Sedan/Wago	n			
Axle					2WD				
Engine		QR20DE		QG18DE	QR20DE	QG16DE	QG18DE	QR20DE	YD22DD Ti
Transmission		CVT		A/T	6M/T	5N	//Т	61	//Т
Brake control	E	SP	А	BS	ESP		Al	BS	
ICC system	Applica- ble		Not applicable						
			CAN com	munication	unit				
ECM	×	×	×	×	×	×	×	×	×
ТСМ	×	×	×	×					
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	<u>LAN-16,</u> <u>"TYPE 7"</u>	<u>LAN-17,</u> "TYPE 8"	<u>LAN-18,</u> <u>"TYPE 9"</u>	<u>LAN-19,</u> <u>"TYPE</u> <u>10"</u>	<u>LAN-20,</u> "TYPE <u>11"</u>	LAN-21, "TYPE 12"			
Can system Trouble diagno- sis	LAN- 156, "CAN SYS- TEM (TYPE Z)"	LAN- 179, "CAN SYS- TEM (TYPE <u>8)</u> "	LAN- <u>195,</u> "CAN SYS- TEM (TYPE <u>9)</u> "	LAN- 210, "CAN SYS- TEM (TYPE 10)"	LAN- 225, "CAN SYS- TEM (TYPE 11)"	LAN-238, "CAN SYSTEM (TYPE 12)"			

Μ

TYPE 7 System diagram

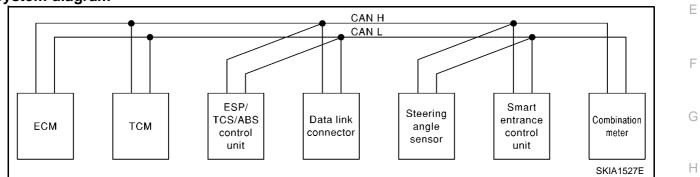


Input/output signal chart

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

Signals	ECM	ТСМ	ESP/ TCS / ABS con- trol unit	Steering angle sensor	Smart entrance control unit	ICC unit	ICC sen- sor	Combina- tion meter	
Engine cooling fan speed signal	Т				R				
Child lock indicator signal					Т			R	
Door switches state signal					Т			R	
Key ID eignel	R				Т				(
Key ID signal	Т				R				
A/C compressor signal	Т				R				1

TYPE 8 System diagram



Input/output signal chart

T: Transmit R: Receive

[CAN]

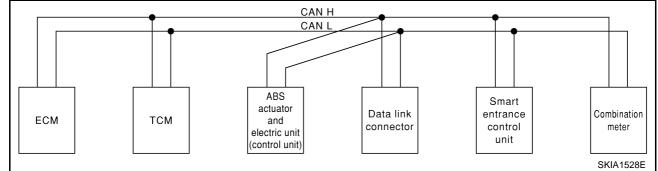
Signals	ECM	ТСМ	ESP/ TCS / ABS control unit	Steering angle sensor	Smart entrance control unit	Combina- tion meter
Engine speed signal	Т	R	R			R
Accelerator pedal position signal	Т	R	R			
ESP operation signal	R		Т			
TCS operation signal	R		Т			
ABS operation signal	R	R	Т			
Stop lamp switch signal		R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

LAN-17

Signals	ECM	ТСМ	ESP/ TCS / ABS control unit	Steering angle sensor	Smart entrance control unit	Combina- tion meter
Engine cooling fan speed signal	Т				R	
Child lock indicator signal					Т	R
Door switches state signal					Т	R
Key ID signal	R				Т	
Key ID signal	Т				R	
A/C compressor signal	Т				R	

TYPE 9

System diagram



Input/output signal chart

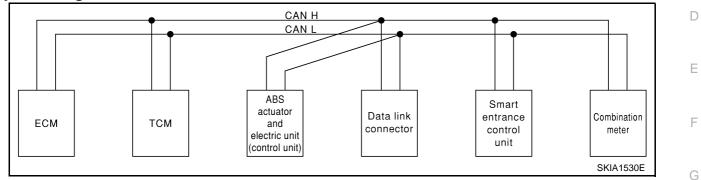
Signals	ECM	тсм	ABS actuator and electric unit (control unit)	Smart entrance con- trol unit	Combination meter
Engine speed signal	Т	R			R
Stop lamp switch signal		R	Т		
Rear window defogger signal	R			Т	
Heater fan switch signal	R				Т
Air conditioner switch signal	R				Т
Primary pulley revolution signal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

T: Transmit R: Receive

Signals	ECM	ТСМ	ABS actuator and electric unit (control unit)	Smart entrance con- trol unit	Combination meter	A
Kay ID aignal	R			Т		В
Key ID signal	Т			R		
A/C compressor signal	Т			R		
	4			I.	·	С

TYPE 10

System diagram

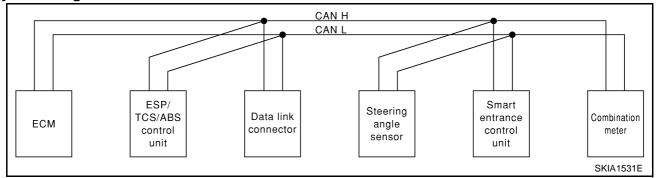


Input/output signal chart

T: Transmit R: Receive

Signals	ECM	ТСМ	ABS actuator and electric unit (control unit)	Smart entrance control unit	Combination meter	Η
Engine speed signal	Т	R			R	
Stop lamp switch signal		R	Т			-
Rear window defogger signal	R			Т		-
Heater fan switch signal	R				Т	J
Air conditioner switch signal	R				Т	-
MI signal	Т				R	LAN
Current gear position signal		Т			R	
Engine coolant temperature signal	Т				R	-
Fuel consumption signal	Т				R	L
			Т		R	-
Vehicle speed signal	R				Т	M
Seat belt reminder signal				R	Т	- 1VI
Headlamp switch signal				Т	R	-
Flashing indicator signal				Т	R	-
Engine cooling fan speed signal	Т			R		-
Child lock indicator signal				Т	R	-
Door switches state signal				Т	R	-
Kay ID signal	R			Т		-
Key ID signal	Т			R		-
A/C compressor signal	Т			R		-

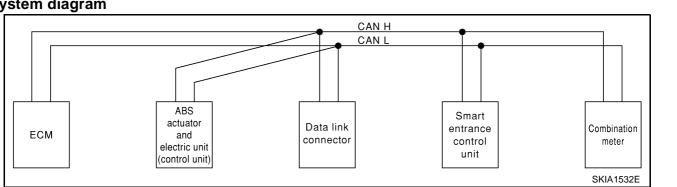
TYPE 11 System diagram



Input/output signal chart

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

TYPE 12 System diagram



Input/output signal chart

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

*1: Except YD22DDTi engine model

*2:YD22DDTi engine model only

LAN-21

[CAN]

T: Transmit R: Receive

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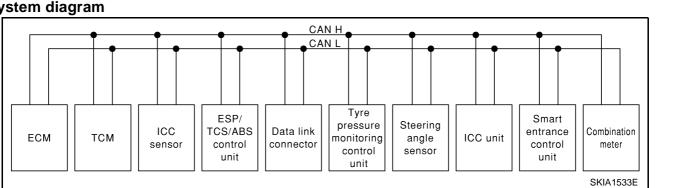
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CAN Communication Unit For RHD Models with Tyre Pressure Monitoring System

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

Body type				5	Sedan/Wago	on				
Axle					2WD					
Engine		QR20DE		QG18DE	QR20DE	QG16DE	QG18DE	QR20DE	YD22DD Ti	
Transmission		CVT		A/T	6M/T	5M/T 6M/T				
Brake control	E	SP	A	BS	ESP	ABS				
ICC system	Applica- ble				Not applicable					
		CAN communication unit								
ECM	×	×	x x x x x x						×	
ТСМ	×	x x x								
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	<u>LAN-23,</u> <u>"TYPE</u> <u>13"</u>	<u>LAN-24,</u> <u>"TYPE</u> <u>14"</u>	<u>LAN-25,</u> <u>"TYPE</u> <u>15"</u>	LAN-26, "TYPE 16"	LAN-27, "TYPE 17"	LAN-28, "TYPE 18"				
Can system Trouble diagno- sis	LAN- 254, "CAN SYS- TEM (TYPE 13)"	LAN- 282, "CAN SYS- TEM (TYPE 14)"	<u>LAN-</u> <u>304,</u> <u>"CAN</u> <u>SYS-</u> <u>TEM</u> <u>(TYPE</u> <u>15)"</u>	<u>LAN-</u> <u>324,</u> <u>"CAN</u> <u>SYS-</u> <u>TEM</u> <u>(TYPE</u> <u>16)"</u>	<u>LAN-</u> <u>344,</u> <u>"CAN</u> <u>SYS-</u> <u>TEM</u> <u>(TYPE</u> <u>17)</u> "	<u>LAN-362, "CAN SYSTEM (TYPE 18)"</u>				

TYPE 13 System diagram



Input/output signal chart

nput/output signal chart							T:	Transmit	R: Receive	E
Signals	ECM	ТСМ	ICC sensor	ESP/ TCS / ABS control unit	Tyre pres- sure monitor- ing con- trol unit	Steer- ing angle sensor	ICC unit	Smart entranc e con- trol unit	Combi- nation meter	F
Engine speed signal	Т	R		R			R		R	G
Accelerator pedal position signal	Т	R		R			R			
Closed throttle position signal	Т						R			Н
ICC steering switch signal	Т						R			
Shift pattern signal		Т					R			
Parking brake switch signal				Т			R			
ICC system display signal							Т			
ICC sensor signal			Т				R			.1
ESP operation signal	R			Т			R			0
TCS operation signal	R			Т			R			
ABS operation signal	R	R		Т			R			LAN
Stop lamp switch signal		R		Т						
Steering wheel angle sensor signal				R		Т				
Wheel speed sensor signal				Т			R			L
Rear window defogger signal	R							Т		
Heater fan switch signal	R								Т	M
Air conditioner switch signal	R								Т	
Primary pulley revolution signal	R	Т					R			
Secondary pulley revolution signal	R	Т					R			
ICC operation signal	R						т			
Brake switch signal	R						Т			
MI signal	Т								R	
Current gear position signal		Т							R	
Engine coolant temperature signal	Т						R		R	
Fuel consumption signal	Т								R	
				Т					R	
Vehicle speed signal	R								Т	
Seat belt reminder signal								R	Т	

[CAN]

А

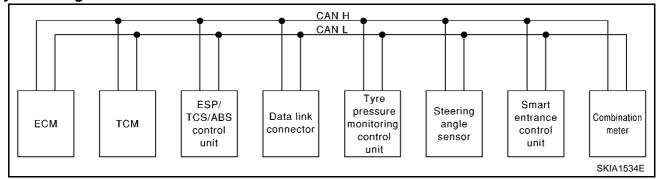
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Signals	ECM	тсм	ICC sensor	ESP/ TCS / ABS control unit	Tyre pres- sure monitor- ing con- trol unit	Steer- ing angle sensor	ICC unit	Smart entranc e con- trol unit	Combi- nation meter
Headlamp switch signal								Т	R
Flashing indicator signal								Т	R
Engine cooling fan speed signal	Т							R	
Child lock indicator signal								Т	R
Door switches state signal								Т	R
	R							Т	
Key ID signal	Т							R	
A/C compressor signal	Т							R	
Tire pressure signal					Т				R

TYPE 14 System diagram



Input/output signal chart

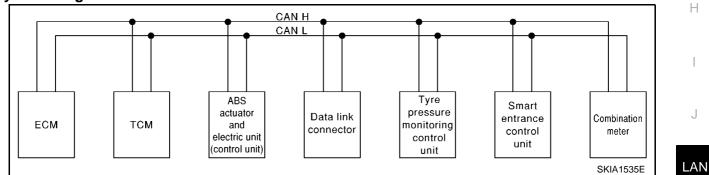
T: Transmit R: Receive

Signals	ECM	тсм	ESP/ TCS / ABS con- trol unit	Tyre pressure monitor- ing con- trol unit	Steering angle sensor	Smart entrance control unit	Combi- nation meter
Engine speed signal	Т	R	R				R
Accelerator pedal position signal	Т	R	R				
ESP operation signal	R		Т				
TCS operation signal	R		Т				
ABS operation signal	R	R	Т				
Stop lamp switch signal		R	Т				
Steering wheel angle sensor signal			R		Т		
Rear window defogger signal	R					Т	
Heater fan switch signal	R						Т
Air conditioner switch signal	R						Т
Primary pulley revolution signal	R	Т					
Secondary pulley revolution signal	R	Т					
MI signal	Т						R
Current gear position signal		Т					R
Engine coolant temperature	Т						R

Signals	ECM	тсм	ESP/ TCS / ABS con- trol unit	Tyre pressure monitor- ing con- trol unit	Steering angle sensor	Smart entrance control unit	Combi- nation meter	F
Fuel consumption signal	Т						R	L
			Т				R	
Vehicle speed signal	R						Т	(
Seat belt reminder signal						R	Т	
Headlamp switch signal						Т	R	_
Flashing indicator signal						Т	R	
Engine cooling fan speed signal	Т					R		
Child lock indicator signal						Т	R	E
Door switches state signal						Т	R	
	R					Т		
Key ID signal	Т					R		F
A/C compressor signal	Т					R		
Tire pressure signal				Т			R	

TYPE 15

System diagram



Input/output signal chart

					T: Transmi	t R: Receive
Signals	ECM	ТСМ	ABS actua- tor and electric unit (control unit)	Tyre pres- sure moni- toring control unit	Smart entrance control unit	Combina- tion meter
Engine speed signal	Т	R				R
Stop lamp switch signal		R	Т			
Rear window defogger signal	R				Т	
Heater fan switch signal	R					Т
Air conditioner switch signal	R					Т
Primary pulley revolution signal	R	Т				
Secondary pulley revolution signal	R	Т				
MI signal	Т					R
Current gear position signal		Т				R
Engine coolant temperature signal	Т					R
Fuel consumption signal	Т					R

[CAN]

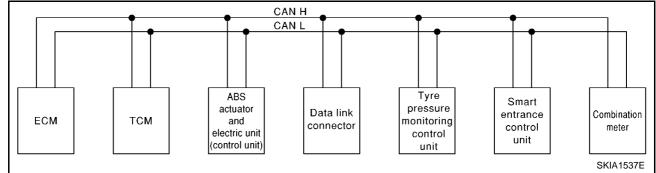
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Signals	ECM	ТСМ	ABS actua- tor and electric unit (control unit)	Tyre pres- sure moni- toring control unit	Smart entrance control unit	Combina- tion meter
Vehicle speed signal			Т			R
venicle speed signal	R					Т
Seat belt reminder signal					R	Т
Headlamp switch signal					Т	R
Flashing indicator signal					Т	R
Engine cooling fan speed signal	Т				R	
Child lock indicator signal					Т	R
Door switches state signal					Т	R
	R				Т	
Key ID signal	Т				R	
A/C compressor signal	Т				R	
Tire pressure signal				Т		R

TYPE 16 System diagram



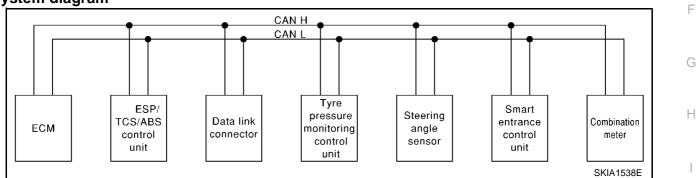
Input/output signal chart

Signals	ECM	ТСМ	ABS actu- ator and electric unit (con- trol unit)	Tyre pres- sure moni- toring control unit	Smart entrance control unit	Combina- tion meter
Engine speed signal	Т	R				R
Stop lamp switch signal		R	Т			
Rear window defogger signal	R				Т	
Heater fan switch signal	R					Т
Air conditioner switch signal	R					Т
MI signal	Т					R
Current gear position signal		Т				R
Engine coolant temperature signal	Т					R
Fuel consumption signal	Т					R
Vehicle speed signal			Т			R
venicie speed signal	R					Т
Seat belt reminder signal					R	Т
Headlamp switch signal					Т	R

Signals	ECM	тсм	ABS actu- ator and electric unit (con- trol unit)	Tyre pres- sure moni- toring control unit	Smart entrance control unit	Combina- tion meter
Flashing indicator signal					Т	R
Engine cooling fan speed signal	Т				R	
Child lock indicator signal					Т	R
Door switches state signal					Т	R
	R				Т	
y ID signal	Т				R	
A/C compressor signal	Т				R	
Tire pressure signal				Т		R

TYPE 17

System diagram

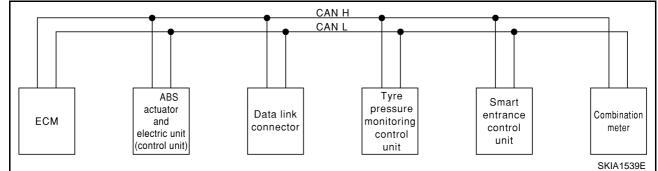


Input/output signal chart

					T: Transmit	R: Receive	
Signals	ECM	ESP/TCS / ABS con- trol unit	Tyre pres- sure moni- toring control unit	Steering angle sen- sor	Smart entrance control unit	Combina- tion meter	LAN
Engine speed signal	Т	R				R	
Accelerator pedal position signal	Т	R					
ESP operation signal	R	Т					L
TCS operation signal	R	Т					
ABS operation signal	R	Т					M
Steering wheel angle sensor signal		R		Т			
Rear window defogger signal	R				Т		
Heater fan switch signal	R					Т	
Air conditioner switch signal	R					Т	
MI signal	Т					R	
Engine coolant temperature signal	Т					R	
Fuel consumption signal	Т					R	
Vehicle speed signal		Т				R	
Vehicle speed signal	R					Т	
Seat belt reminder signal					R	Т	
Headlamp switch signal					Т	R	
Flashing indicator signal					Т	R	
Engine cooling fan speed signal	Т				R		

Signals	ECM	ESP/TCS / ABS con- trol unit	Tyre pres- sure moni- toring control unit	Steering angle sen- sor	Smart entrance control unit	Combina- tion meter
Child lock indicator signal					Т	R
Door switches state signal					Т	R
	R				Т	
Key ID signal	Т				R	
A/C compressor signal	Т				R	
Tire pressure signal			Т			R

TYPE 18 System diagram



Input/output signal chart

T: Transmit R: Receive

				i. mane	
Signals	ECM	ABS actua- tor and elec- tric unit (control unit)	Tyre pres- sure monitor- ing control unit	Smart entrance control unit	Combination meter
Engine speed signal	Т				R
Rear window defogger signal	R*1			Т	
Heater fan switch signal	R*1				Т
Air conditioner switch signal	R				Т
MI signal	Т				R
Glow lamp signal ^{*2}	Т				R
Engine coolant temperature signal	Т				R
Fuel consumption signal	Т				R
Vehicle speed signal		Т			R
	R				Т
Seat belt reminder signal				R	Т
Headlamp switch signal				Т	R
Flashing indicator signal				Т	R
Engine cooling fan speed signal	Т			R	
Child lock indicator signal				Т	R
Door switches state signal				Т	R
Key ID signal	R			Т	
	Т			R	

Signals	ECM	ABS actua- tor and elec- tric unit (control unit)	Tyre pres- sure monitor- ing control unit	Smart entrance control unit	Combination meter	A
A/C compressor signal	Т			R		В
Tire pressure signal			Т		R	

[CAN]

С

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*1: Except YD22DDTi engine model

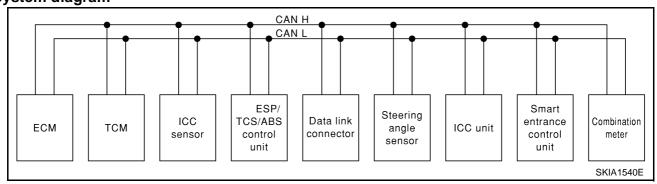
*2: YD22DDTi engine model only

CAN Communication Unit For RHD Models without Tyre Pressure Monitoring System

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

Body type				Ś	Sedan/Wago	on					
Axle					2WD						
Engine		QR20DE		QG18DE	QR20DE	QG16DE	QG18DE	QR20DE	YD22DD Ti		
Transmission		CVT		A/T	6M/T	51	Л/Т	6N	И/Т		
Brake control	E	SP AE		BS	ESP		A	BS			
ICC system	Applica- ble				Not ap	pplicable					
			CAN con	nmunication	unit						
ECM	×	×	×	×	×	×	×	×	×		
ТСМ	×	×	×	×							
ICC sensor	×										
ESP/TCS/ABS control unit	×	×			×						
ABS actuator and electric unit (control unit)			×	×		×	×	×	×		
Data link connector	×	×	×	×	×	×	×	×	×		
Steering angle sensor	×	×			×						
ICC unit	×									L	
Smart entrance control unit	×	×	×	×	×	×	×	×	×		
Combination meter	×	×	×	×	×	×	×	×	×		
Can communication type	<u>LAN-30,</u> <u>"TYPE</u> <u>19"</u>	<u>LAN-31,</u> <u>"TYPE</u> <u>20"</u>	<u>LAN-32,</u> <u>"TYPE</u> <u>21"</u>	<u>LAN-33,</u> <u>"TYPE</u> <u>22"</u>	<u>LAN-34,</u> <u>"TYPE</u> <u>23"</u>	LAN-35, "TYPE 24"					
Can system Trouble Diagnosis	<u>LAN-</u> <u>379,</u> "CAN SYS- TEM (TYPE <u>19)"</u>	LAN- 404, "CAN SYS- TEM (TYPE 20)"	<u>LAN-</u> <u>422,</u> <u>"CAN</u> <u>SYS-</u> <u>TEM</u> (TYPE <u>21)"</u>	LAN- 438, "CAN SYS- TEM (TYPE 22)"	LAN- 454, "CAN SYS- TEM (TYPE 23)"	LAN-469, "CAN SYSTEM (TYPE 24)"					

TYPE 19 System diagram



Input/output signal chart

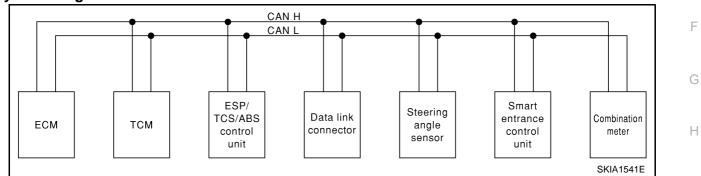
Signals	ECM	тсм	ICC sen- sor	ESP/ TCS / ABS control unit	Steering angle sensor	ICC unit	Smart entrance control unit	Combi- nation meter
Engine speed signal	Т	R		R		R		R
Accelerator pedal position signal	Т	R		R		R		
Closed throttle position signal	Т					R		
ICC steering switch signal	Т					R		
Shift pattern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

[CAN]

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Signals	ECM	ТСМ	ICC sen- sor	ESP/ TCS / ABS control unit	Steering angle sensor	ICC unit	Smart entrance control unit	Combi- nation meter	A
Flashing indicator signal							Т	R	D
Engine cooling fan speed signal	Т						R		
Child lock indicator signal							Т	R	С
Door switches state signal							Т	R	
	R						Т		_
Key ID signal	Т						R		D
A/C compressor signal	Т						R		
ТҮРЕ 20									Е

TYPE 20 System diagram

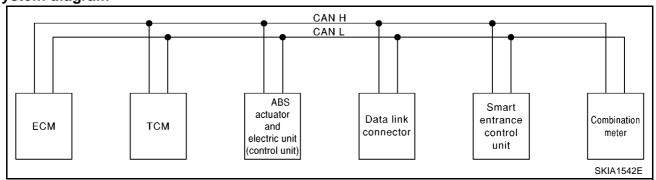


Input/output signal chart

Signals	ECM	ТСМ	ESP/TCS / ABS control unit	Steering angle sen- sor	Smart entrance control unit	R: Receive Combina- tion meter	J
Engine speed signal	Т	R	R			R	LAN
Accelerator pedal position signal	Т	R	R				
ESP operation signal	R		Т				
TCS operation signal	R		Т				L
ABS operation signal	R	R	Т				
Stop lamp switch signal		R	Т				M
Steering wheel angle sensor signal			R	Т			
Rear window defogger signal	R				Т		
Heater fan switch signal	R					Т	
Air conditioner switch signal	R					Т	
Primary pulley revolution signal	R	Т					
Secondary pulley revolution signal	R	Т					
MI signal	Т					R	
Current gear position signal		Т				R	
Engine coolant temperature signal	Т					R	
Fuel consumption signal	Т					R	
Vehicle ane of signal			Т			R	
Vehicle speed signal	R					Т	
Seat belt reminder signal					R	Т	

Signals	ECM	ТСМ	ESP/TCS / ABS control unit	Steering angle sen- sor	Smart entrance control unit	Combina- tion meter
Headlamp switch signal					Т	R
Flashing indicator signal					Т	R
Engine cooling fan speed signal	Т				R	
Child lock indicator signal					Т	R
Door switches state signal					Т	R
	R				Т	
Key ID signal	Т				R	
A/C compressor signal	Т				R	

TYPE 21 System diagram

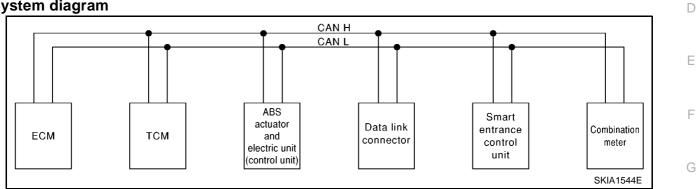


Input/output signal chart

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

Signals	ECM	ТСМ	ABS actuator and electric unit (control unit)	Smart entrance con- trol unit	Combination meter	1
Door switches state signal				Т	R	E
	R			Т		
Key ID signal	Т			R		
A/C compressor signal	Т			R		C

TYPE 22 System diagram



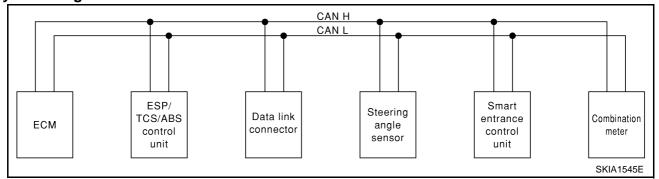
Input/output signal chart

				T: Tran	smit R: Receive	Н
Signals	ECM	ТСМ	ABS actuator and electric unit (control unit)	Smart entrance con- trol unit	Combination meter	I
Engine speed signal	Т	R			R	
Stop lamp switch signal		R	Т			J
Rear window defogger signal	R			Т		
Heater fan switch signal	R				Т	
Air conditioner switch signal	R				т	LA
MI signal	Т				R	
Current gear position signal		Т			R	I
Engine coolant temperature signal	Т				R	
Fuel consumption signal	Т				R	
Vehicle encodering			Т		R	M
Vehicle speed signal	R				Т	
Seat belt reminder signal				R	Т	
Headlamp switch signal				Т	R	
Flashing indicator signal				Т	R	
Engine cooling fan speed signal	Т			R		
Child lock indicator signal				Т	R	
Door switches state signal				Т	R	
Key ID signal	R			Т		
Key ID signal	Т			R		
A/C compressor signal	Т			R		

- T. Transmit R. Receive

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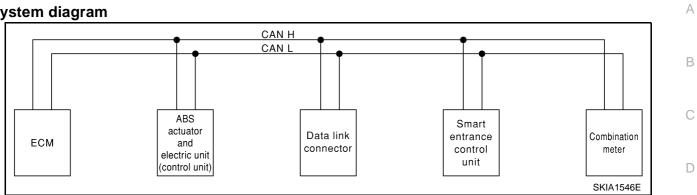
TYPE 23 System diagram



Input/output signal chart

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

TYPE 24 System diagram



Input/output signal chart

npurouput signal onart			Т: Т	ransmit R: Receive
Signals	ECM	ABS actuator and electric unit (con- trol unit)	Smart entrance control unit	Combination meter
Engine speed signal	Т			R
Rear window defogger signal	R*1		Т	
Heater fan switch signal	R*1			Т
Air conditioner switch signal	R			Т
MI signal	Т			R
Glow lamp signal ^{*2}	Т			R
Engine coolant temperature signal	Т			R
Fuel consumption signal	Т			R
Vehicle speed signal		Т		R
venicie speed signal	R			т
Seat belt reminder signal			R	т
Headlamp switch signal			Т	R
Flashing indicator signal			Т	R
Engine cooling fan speed signal	Т		R	
Child lock indicator signal			Т	R
Door switches state signal			Т	R
Key ID signal	R		Т	
iney in signal	Т		R	
A/C compressor signal	Т		R	

*1: Except YD22DDTi engine model

*2: YD22DDTi engine model only



Ν

CAN SYSTEM (TYPE 1)

System Description

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

Component Parts and Harness Connector Location

Under the passenger seat Passenger side view with \mathcal{N} View with lower ТК instrument panel removed lower instrument panel removed ESP/TCS/ABS 6 Control unit (B109 Ъ ECM(F102 ັວ 17 3 TCM (Transmission ۲ ا Smart entrance control unit (M41 control module) (F103) 12111 フレ 3 View with instrument panel Bumper LH Under the driver's seat center moved ICC unit (B9 ICC sensor (E53) Front Tyre pressúre monitoring く control unit (M96) Combination meter (M37) 30

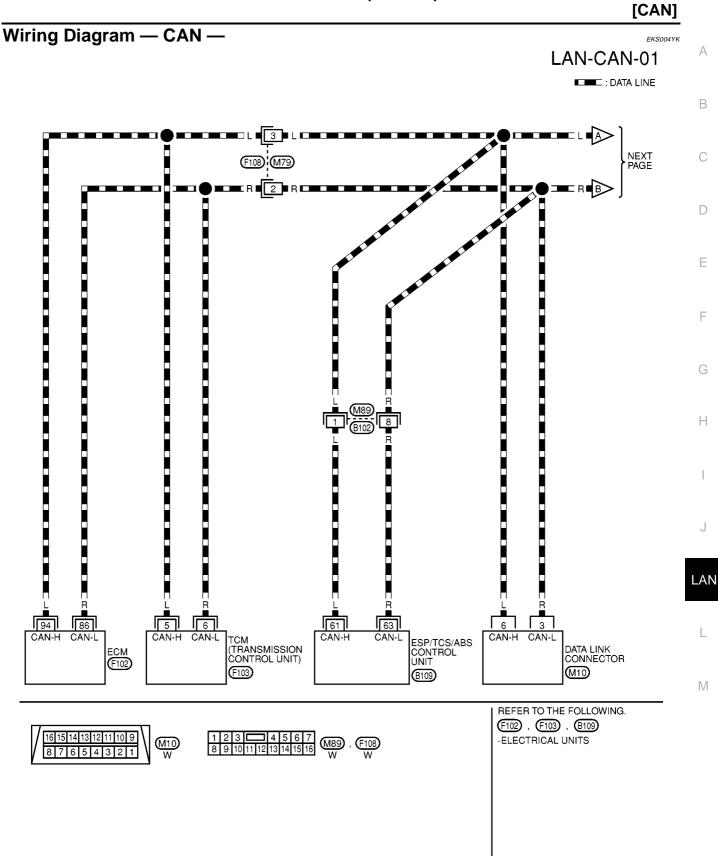
PKIA0886E

PFP:23710

EKS004YI

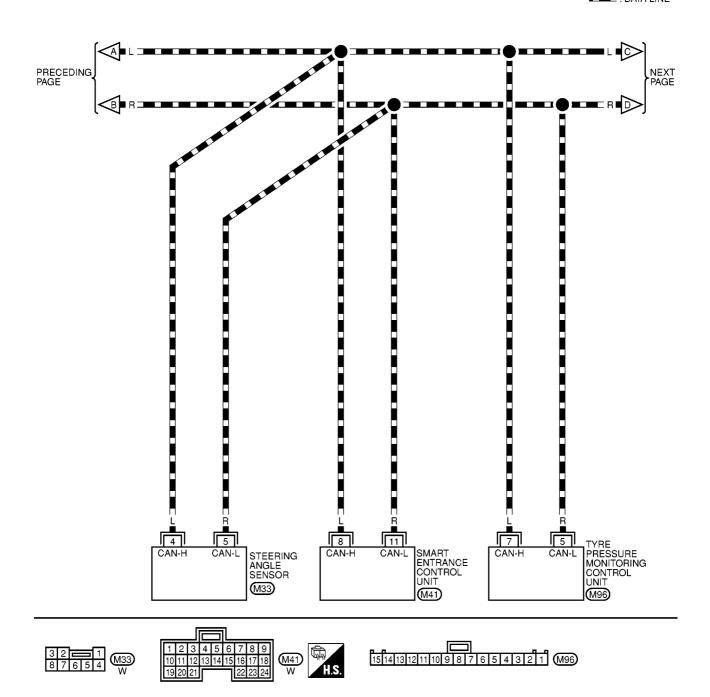
EKS004YJ





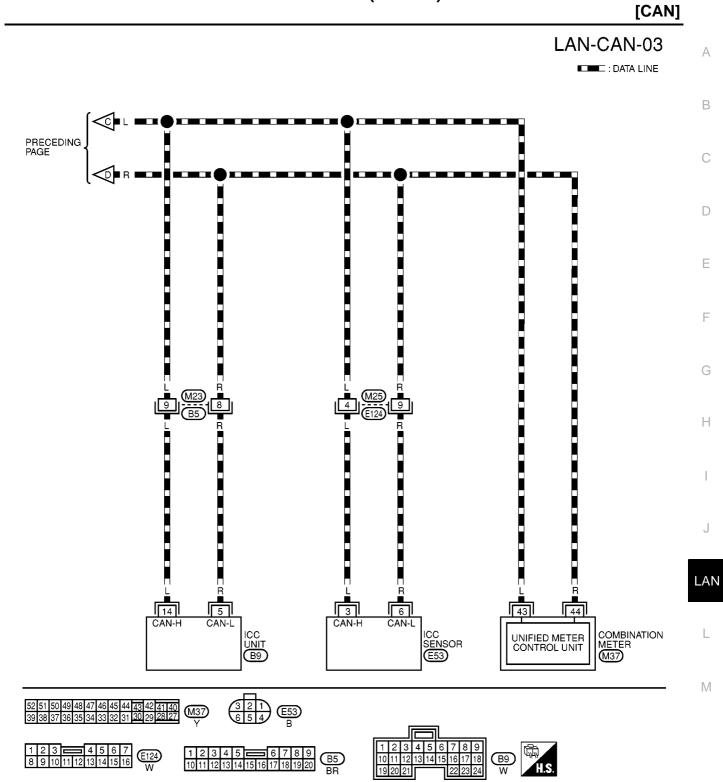
MKWA0219E





MKWA0220E





19 20

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Work Flow

EKS004YL

- 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 <u>EC-1083,</u> "DTC U1000, U1001 CAN COMMUNICATION LINE" (WITH EURO-OBD) or <u>EC-1505, "DTC U1000,</u> U1001 CAN COMMUNICATION LINE" (WITHOUT EURO-OBD) for "ENGINE" and Refer to <u>CVT-118,</u> "DTC U1000 CAN COMMUNICATION LINE" (EURO-OBD) or <u>CVT-201, "CAN COMMUNICATION LINE"</u> (ALL) for "CVT". Refer to <u>BRC-107, "Inspection 15 CAN Communication Circuit, ESP/TCS/ABS Control Unit and Steering Angle Sensor" for "ABS". Refer to <u>BCS-40, "CAN Communication Line Check"</u> for "SMART ENTRANCE". Refer to <u>WT-35, "Inspection 4: CAN Communication Line"</u> for "AIR PRESSURE MONITOR". Refer to <u>ACS-46, "DTC 20 CAN COMM CIRCUIT"</u> for "ICC".
 </u>
- 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 <u>LAN-41, "CHECK SHEET"</u>

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 <u>LAN-42, "CHECK SHEET</u> <u>RESULTS (EXAMPLE)"</u>

CHECK SHEET

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	_		_	— —	_	CIRC 4 CAN CIRC 4
ABS	CAN	CAN	CAN	CAN	<u> </u>	CAN	_	_	CAN	_	
SMART	COMM CAN	CIRC 1 CAN	CIRC 2 CAN	CIRC 3	_	CIRC 5	_	_	CIRC 6	_	CAN
ENTRANCE AIR	COMM CAN	CIRC 1 CAN	CIRC 2								CIRC 3 CAN
PRESSURE	COMM	CIRC 1	-	_	_	_	_	_	_	_	CIRC 2
00	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	CAN CIRC 3	-	-	-	-	CAN CIRC 8	-
Symptoms:											
	Attach copy ENGINE LF-DIAG RE			S	Attach co CVT ELF-DIAG I				A	I COPY OF IBS IG RESULT	-s
SM	Attach copy IART ENTRA LF-DIAG RE	ANCE			Attach co PRESSURI ELF-DIAG F	E MONITOF	}		I	n copy of CC IG RESULT	S
	Attach copy ENGINE DATA MONI ⁻				Attach co CVT DATA MO				A	COPY OF BS MONITOR	
SM	Attach copy IART ENTRA DATA MONI ⁻	ANCE		AIR	Attach cc PRESSURE DATA MO	EMONITOR			I	n copy of CC MONITOR	

CHECK SHEET RESULTS (EXAMPLE)

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	_	_	_	-	_	CAN
ABS	COIVIN	CAN	CAN	CAN	CIRC 3	CAN	_		CAN		CIRC 4
SMART	COMM CAN	CIRC 1 CAN	CIRC 2 CAN	CIRC 3		CIRC 5	_		CIRC 6		CAN
ENTRANCE	COMM	CIRC 1	CIRC 2	-	-	-	-	_	-	-	CIRCS
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 CINC 2	CAN CINC 3	-	CAN CINC 6	-	CAR CINC 5	-	
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	CAN	CAN	_	_	_	_	_	_	_		CAN CIRC 2
PRESSURE	COMM	CIRC 1									
PRESSURE MONITOR ICC ase 2: Replace	COMM CAN COMM TCM CAN	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	CAN CIRC 3		– CAN	_ 	 CAN	CAN CIRC 8	
PRESSURE MONITOR ICC Case 2: Replace	COMM CAN COMM TCM	CAN CIRC 1		CIRC 4	CIRC 3	_ 		- 	CAN CIRC 5		CAN CIRC 4
	COMM CAN COMM TCM CAN CAN CAM	CAN CIRC 1	CIRC 2		CIRC 3 CAN CIRC 3 CAN	-	CAN	- - -			CIRC 4 CAN
PRESSURE MONITOR ICC case 2: Replace ENGINE CVT	COMM CAN COMM TCM CAN CAN CAN CAN CAN	CAN CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN	CIRC 2	CIRC 4 CAN CINC 2 - CAN	CIRC 3	- - - CAN CIBC 5	CAN CIRC 6		CIRC 5 — CAN		CIRC 4 CAN
PRESSURE MONITOR ICC case 2: Replace ENGINE CVT ABS SMART	COMM CAN COMM TCM CAN CAN CAN CAN CAN CAN	CAN CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN	CIRC 2	CIRC 4 CAN CINC 2 -	CIRC 3 CAN CIRC 3 CAN CIRC 3	– – CAN CIRC 5 –	CAN CIRC 6 –		CIRC 5		CIRC 4 CAN CIRC 4 — CAN
PRESSURE MONITOR ICC Case 2: Replace ENGINE CVT ABS SMART ENTRANCE AIR PRESSURE	COMM CAN COMM TCM CAN CAN CAN CAN CAN CAN CAN	CAN CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1	CIRC 2	CIRC 4 CAN CINC 2 - CAN	CIRC 3 CAN CIRC 3 CAN CIRC 3		CAN CIRC 6 –		CIRC 5 — CAN		CIRC - CAN CIRC - CAN CIRC : CAN
PRESSURE MONITOR ICC Case 2: Replace ENGINE CVT ABS SMART ENTRANCE AIR	COMM CAN COMM TCM CAN CAN CAN CAN CAN CAN CAN CAN CAN CAN	CAN CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN	CIRC 2	CIRC 4 CAN CINC 2 - CAN	CIRC 3 CAN CIRC 3 CAN CIRC 3		CAN CIRC 6 –		CIRC 5 — CAN		CIRC 4 CAN CIRC 4 - CAN CIRC 3 CAN
PRESSURE MONITOR ICC iase 2: Replace ENGINE CVT ABS SMART ENTRANCE AIR PRESSURE MONITOR	COMM CAN COMM TCM CAN CAN CAN CAN CAN CAN CAN COMM CAN CAN COMM CAN CAN	CAN CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN	CIRC 2	CIRC 4 CAN CINC 2 - CAN CINC 3 - CAN CINC 3 - CAN	CIRC 3 CAN CIRC 3 CAN CIRC 3 - - - - CAN		CAN CIRC 6 –		CIRC 5 — CAN	CIRC 8	CIRC - CAN CIRC - CAN CIRC : CAN
PRESSURE MONITOR ICC CC EASE 2: Replace ENGINE CVT ABS SMART ENTRANCE AIR PRESSURE MONITOR ICC	COMM CAN COMM TCM CAN CAN CAN CAN CAN CAN CAN COMM CAN CAN COMM CAN CAN	CAN CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN	CIRC 2	CIRC 4	CIRC 3 CAN CIRC 3 CAN CIRC 3 - - - - CAN		CAN CIRC 6 - - - - - - - CAN		CIRC 5 - CAN CIRC 6 CAN CIRC 6 - CAN CIRC 6	CIRC 8	CIRC 4 CAN CIRC 4 - CAN CIRC 3
PRESSURE MONITOR ICC CC Ease 2: Replace ENGINE CVT ABS SMART ENTRANCE AIR PRESSURE MONITOR	COMM CAN COMM CAN COMM CAN CAN CAN CAN CAN CAN CAN CAN CAN CAN	CAN CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1	CIRC 2	CIRC 4	CIRC 3 CAN CIRC 3 CAN CIRC 3 - - - CAN CIRC 3		CAN CIRC 6 - - - -		CIRC 5 - CAN CIRC 6	CIRC 8	CIRC 4 CAN CIRC 4 CAN CIRC 3 CAN CIRC 2 CAN CIRC 2
PRESSURE MONITOR ICC icc icase 2: Replace ENGINE CVT ABS SMART ENTRANCE AIR PRESSURE MONITOR ICC ENGINE CVT	COMM CAN COMM TCM CAN CAN CAN CAN CAN CAN CAN CAN CAN CAN	CAN CIRC 1 CAN CIRC 1	CIRC 2	CIRC 4 CAN CINC 2 - CAN CINC 3 - CAN CINC 4 CAN CIRC 2 - CAN CIRC 2 - CAN	CIRC 3 CAN CIRC 3 CAN CIRC 3 - - - CAN CIRC 3	CIRC 5 - - - - - - - - - CAN	CAN CIRC 6 - - - - - CAN CIRC 6		CIRC 5 - CAN CIRC 6 - - - CAN CIRC 5 - CAN CIRC 5	CIRC 8	CIRC 4 CAN CIRC 4 CAN CIRC 3 CAN CIRC 3 CAN CIRC 4
PRESSURE MONITOR ICC iase 2: Replace ENGINE CVT ABS SMART ENTRANCE AIR PRESSURE MONITOR ICC ENGINE CVT ABS SMART	COMM CAN COMM CAN CAN CAN CAN CAN CAN CAN COMM CAN CAN CAN CAN CAN CAN CAN CAN CAN CAN	CAN CIRC 1 CAN CIRC 1	CIRC 2	CIRC 4 CAN CINC 2 - CAN CINC 3 - CAN CINC 3 - CAN CINC 4	CIRC 3 CAN CIRC 3 CAN CIRC 3 - - - CAN CIRC 3 CAN CIRC 3 CAN CIRC 3 CAN CIRC 3	CIRC 5 - - - -	CAN CIRC 6 - - - - - CAN CIRC 6 -		CIRC 5 - CAN CIRC 6 - - - CAN CIRC 5 -	CIRC 8	CIRC CAN CIRC CAN CAN
PRESSURE MONITOR ICC CC ENGINE CVT ABS SMART ENTRANCE AIR PRESSURE MONITOR ICC ENGINE	COMM CAN COMM CAN CAN CAN CAN CAN CAN CAN CAN CAN COMM CAN CAN COMM CAN COMM	CAN CIRC 1 CAN CIRC 1	CIRC 2	CIRC 4 CAN CINC 2 - CAN CINC 3 - CAN CINC 4 CAN CIRC 2 - CAN CIRC 2	CIRC 3 CAN CIRC 3 CAN CIRC 3 - - - CAN CIRC 3 CAN CIRC 3 CAN CIRC 3 CAN CIRC 3 CAN CIRC 3	CIRC 5 — — — — — — — — — — — — —	CAN CIRC 6 - - - - - CAN CIRC 6 - -		CIRC 5 — CAN CIRC 6 — — — — CAN CIRC 5 — CAN CIRC 5 — CAN CIRC 5	CIRC 8	CIRC 4 CAN CIRC 4 CAN CIRC 2 CAN CIRC 2 CAN CIRC 2

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ENGINE	CAN	CAN	_	CAN	CAN CINC 3	_	CAN	_	CAN	_	CAN
СVТ	COMM CAN	CIRC 1 CAN	CAN	CIRC 2	CAN CAN CIMC 3	_	CIRC 6	_	CIRC 5	_	CIRC 4 CAN
ABS	COMM CAM	CIRC 1 CAN	CIRC 2 CAN	CAN		CAN	_		CAN		CIRC 4
SMART	COMM	CIRC 1 CAN	CIRC 2 CAN	CIRC 3	_	CIRC 5	_		CIRC 6	_	CAN
ENTRANCE	COMM	CIRC 1	CIRC 2	_	_	_	_	—	-	_	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 CINC 3	_	_	_	-	CAN CIRC 8	_
ENGINE	CAN	CAN	_	CAN	CAN	_	CAN		CAN	_	CAN
CVT	COMM CAN	CIRC 1 CAN	CAN	CIRC 2	CIRC 3 CAN		CIRC 6		CIRC 5	_	CIRC 4 CAN
	COMM CAN	CIRC 1 CAN	CIRC 2		CIRC 3				CAN	_	CIRC 4
ABS	COMM	CIRC 1	CAN CINC 2	CAN CINC 3	_	CAN CINC 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
ICC	CAN	CAN	CAN	CAN	CAN					CAN	
ase 4: Replace	1	CIRC 1	unit	CIRC 4	CIRC 3					CIRC 8	
Case 4: Replace		CIRC 1	CIRC 2				CAN CIRC 6	_ 	CAN CIRC 5		CAN CIRC 4
Case 4: Replace	Smart entra CAN COMM CAN	CIRC 1	CIRC 2	CIRC 4	CIRC 3 CAN CIRC 3 CAN			_ 		CIRC 8	CIRC 4 CAN
Case 4: Replace ENGINE CVT	Smart entra CAN COMM CAN COMM CAN	CIRC 1 nce control I CAN CIRC 1 CAN CIRC 1 CAN	CIRC 2	CIRC 4 CAN CIRC 2 – CAN	CIRC 3	– CAN	CIRC 6		CIRC 5 — CAN	CIRC 8	CIRC 4
Case 4: Replace ENGINE CVT ABS SMART	Smart entra CAN COMM CAN CAN COMM	CIRC 1	CIRC 2	CIRC 4	CIRC 3 CAN CIRC 3 CAN CIRC 3	_	CIRC 6	_	CIRC 5	CIRC 8	CIRC 4 CAN
Case 4: Replace ENGINE CVT ABS SMART ENTRANCE AIR PRESSURE	Smart entra CAN COMM CAN CAN CAN COMM CAM	CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN	CIRC 2	CIRC 4 CAN CIRC 2 – CAN	CIRC 3 CAN CIRC 3 CAN CIRC 3	– CAN CIRC 5	CIRC 6 — —	_	CIRC 5 — CAN	CIRC 8	CIRC 4 CAN CIRC 4 — CAN
Case 4: Replace ENGINE CVT ABS SMART ENTRANCE AIR	Smart entra CAN COMM CAN CAN CAN CAN CAN CAN CAN	CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN	CIRC 2	CIRC 4 CAN CIRC 2 – CAN	CIRC 3 CAN CIRC 3 CAN CIRC 3	– CAN CIRC 5	CIRC 6 — —	_	CIRC 5 — CAN	CIRC 8	CIRC 4 CAN CIRC 4 - CAN CIRC 3 CAN
ase 4: Replace ENGINE CVT ABS SMART ENTRANCE AIR PRESSURE MONITOR ICC	Smart entra CAN COMM CAN COMM CAN CAN CAN CAN CAN CAN CAN CAN CAN	CIRC 1	CIRC 2	CIRC 4 CAN CIRC 2 - CAN CIRC 3 - CAN CIRC 4	CIRC 3 CAN CIRC 3 CAN CIRC 3 - - - CAN CIRC 3	– CAN CIRC 5 –	CIRC 6 	- - -	CIRC 5 — CAN CIRC 6 — —	CIRC 8	CIRC 4 CAN CIRC 4 CAN CIRC 3 CAN CIRC 2 -
ase 4: Replace ENGINE CVT ABS SMART ENTRANCE AIR PRESSURE MONITOR	Smart entra CAN COMM CAN COMM CAN CAN CAN CAN CAN CAN CAN CAN CAN CAN	CIRC 1	CIRC 2	CIRC 4 CAN CIRC 2 – CAN CIRC 3 – CAN CIRC 3	CIRC 3 CAN CIRC 3 CAN CIRC 3 - - - CAN CIRC 3 CAN CIRC 3	– CAN CIRC 5 –	CIRC 6 	- - -	CIRC 5 CAN CIRC 6 	CIRC 8	CIRC 4 CAN CIRC 4 CAN CIRC 3 CAN CIRC 2 CAN CIRC 2 CAN CIRC 4
ase 4: Replace ENGINE CVT ABS SMART ENTRANCE AIR PRESSURE MONITOR ICC	Smart entra CAN COMM CAN COMM CAN COMM CAN CAN CAN CAN CAN CAN CAN CAN CAN CAN	CIRC 1 CAN CIRC 1	CIRC 2	CIRC 4 CAN CIRC 2 - CAN CIRC 3 - CAN CIRC 3 CAN CIRC 4 CAN CIRC 4	CIRC 3 CAN CIRC 3 CAN CIRC 3 - - - - CAN CIRC 3 CAN CIRC 3		CIRC 6 CAN	- - -	CIRC 5 CAN CIRC 6 CIRC 5 	CIRC 8	CIRC 4 CAN CIRC 4 CAN CIRC 3 CAN CIRC 2 - CAN
ase 4: Replace ENGINE CVT ABS SMART ENTRANCE AIR PRESSURE MONITOR ICC ENGINE CVT	Smart entra CAN COMM CAN CAN CAN CAN CAN CAN CAN CAN CAN CAN	CIRC 1 CAN CIRC 1	CIRC 2	CIRC 4 CAN CIRC 2 - CAN CIRC 3 - CAN CIRC 3 - CAN CIRC 4 CAN CIRC 4 CAN CIRC 2 - CAN	CIRC 3 CAN CIRC 3 CAN CIRC 3 - - - CAN CIRC 3 CAN CIRC 3 CAN		CIRC 6 CAN	- - - - -	CIRC 5 CAN CIRC 6 - CAN CIRC 5 - CAN CIRC 5 - CAN	CIRC 8	CIRC 4 CAN CIRC 4 - CAN CIRC 3 CAN CIRC 2 - CAN CIRC 4 CAN
ase 4: Replace ENGINE CVT ABS SMART ENTRANCE AIR PRESSURE MONITOR ICC ENGINE CVT ABS SMART	Smart entra CAN COMM CAN COMM CAN CAN CAN CAN CAN CAN CAN CAN CAN CAN	CIRC 1 CAN CIRC 1 CAN	CIRC 2	CIRC 4 CAN CIRC 2 - CAN CIRC 3 - CAN CIRC 3 CAN CIRC 4 CAN CIRC 4	CIRC 3 CAN CIRC 3 CAN CIRC 3 - - - CAN CIRC 3 CAN CIRC 3 CAN		CIRC 6 CAN CIRC 6 	- - - - - -	CIRC 5 — CAN CIRC 6 — — — — CAN CIRC 5 —	CIRC 8	CIRC 4 CAN CIRC 4 CAN CIRC 3 CAN CIRC 2 CAN CIRC 4 CAN CIRC 4 CAN CIRC 4
ase 4: Replace ENGINE CVT ABS SMART ENTRANCE AIR PRESSURE MONITOR ICC ENGINE	Smart entra CAN COMM CAN CAN CAN CAN CAN CAN CAN CAN CAN CAN	CIRC 1 nce control I CAN CIRC 1 CAN CIRC 1	CIRC 2	CIRC 4 CAN CIRC 2 - CAN CIRC 3 - CAN CIRC 4 CAN CIRC 4 CAN CIRC 2 - CAN CIRC 2	CIRC 3 CAN CIRC 3 CAN CIRC 3 - - - CAN CIRC 3 CAN CIRC 3 CAN CIRC 3 CAN CIRC 3 CAN CIRC 3	CAN CIRC 5 - - - - - CAN CIRC 5	CIRC 6 CAN CIRC 6 	- - - - - - - - -	CIRC 5 — CAN CIRC 6 — — — — — CAN CIRC 5 — CAN CIRC 5 — CAN CIRC 5	CIRC 8	CIRC 4 CAN CIRC 4 CAN CIRC 3 CAN CIRC 2 CAN CIRC 2 CAN CIRC 4 CAN CIRC 4 CAN CIRC 4

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ENGINE	CAN COMM	CAN CIRC 1	-	CAN CIRC 2	CAN CIRC 3	-	CAN CIRC 6	-	CAN CIRC 5	-	CAN CIRC 4
CVT	CAN	CAN	CAN	-	CAN	_	_	_	-	_	CAN
ABS	COMM CAN	CIRC 1 CAN	CIRC 2 CAN	CAN	CIRC 3	CAN	_	_	CAN		CIRC 4
SMART	COMM CAN	CIRC 1 CAN	CIRC 2 CAN	CIRC 3		CIRC 5			CIRC 6		CAN
ENTRANCE	COMM	CIRC 1	CIRC 2	_	-	_	-	_		_	CIRC
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	_
ase 6: Replace	ICC unit			CAN		· _ · _ · _ ·				·· _ · _ ·	CAN
ENGINE	COMM	CIRC 1	-	CIRC 2	CIRC 3	_	CIRC 6	-	CAM CINC 5	_	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	-	_	CAN CINC 6	_	_
	CAN COMM	CAN CIRC 1	CAN CIRC 2	_	_	_	-	—	_	_	CAN CIRC
AIR PRESSURE MONITOR	CAN COMM	CAN CIRC 1	_	-	-	_	_	-	_	_	CAN CIRC
CC	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	CAN CIRC 3	_	-	-	-	CAN CIRC 8	-
	CAN	CAN		CAN	CAN		CAN		CAN		CAN
ENGINE	COMM CAN	CIRC 1 CAN	-	CIRC 2	CIRC 3 CAN	_	CIRC 6	_	CIRC 5	_	CIRC
CVT	COMM	CIRC 1	CAN CIRC 2	-	CIRC 3	-	-	-	-	_	CAN CIRC
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
AIR PRESSURE MONITOR	CAN COMM	CAN CIRC 1	_	_	_	_	_	_	-	_	CAN CIRC
ICC	CAN COMM	CAN CIRC 1	CAN CINC 2	CAN CIMC 4	CAN CIMC 3	_	-	_	-	CAN CIMC 8	_
ase 7	CAN	CAN		CAN	CAN		CAM			<u></u> .	CAN
ENGINE	COMM CAN	CIRC 1 CAN	– CAN	CIRC 2	CAN CINC 3	_	CAN CINC 6	-	CAM CINC 5	_	
CVT	COMM	CIRC 1	CIRC 2	-	CAN CINC 3	-	_	_	-	_	CINC
ABS	CAN COMM	CAN CIRC 1	CAN CINC 2	CAN CINC 3	_	CAN CIRC 5	-	—	CAN CIRC 6	_	_
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CINC 2	-	_	_	-	-	-	_	CAN CIRC
AIR PRESSURE MONITOR	CAN COMM	CAN CIRC 1	_	_	_	_	-	-	_	_	CAN CIRC
СС	CAN COMM	CAN CIRC 1	CAN CINC 2	CAN CINC 4	CAN CIRC 3	-	-	-	-	CAN CIRC 8	-

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ол <i>т</i>	COMM	CIRC 1	-	CAN CIRC 2	CAN CIRC 3	-	CAN CINC 6	-	CAN CINC 5	-	CAN CINC 4
CVT	CAN COMM	CAN CIRC 1	CAN CIRC 2	-	CAN CIRC 3	_	-	_	-	_	CAN CINC 4
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 3	-	CAN CINC 5	_	_	CAN CINC 6	_	-
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIMC 2	_	_	-	_	_	-	_	CAN CIRC 3
AIR PRESSURE MONITOR	CAN COMM	CAN CIRC 1	-	-	_	_	_	_	-	_	CAN CIRC 2
	CAN COMM	CAN CIRC 1	CAN CINC 2	CAN CINC 4	CAN CINC 3	_	_	_	-	CAN CIRC 8	_
ase 9 ENGINE	CAN	CAN		CAN	CAN	_	CAN		CAN CINC 5	_	CAN CINC 4
	COMM CAN	CIRC 1 CAN	CAN	CIRC 2	CIRC 3 CAN		CIRC 6		CINC 5		CINC 4 CAN
	COMM CAN	CIRC 1 CAN	CIRC 2 CAN	CAN	CIRC 3	CAN	_	_	CAN		CAR CINC 4
ABS	COMM	CIRC 1	CIRC 2	CIRC 3	-	CIRC 5	_	-	CINC 6		
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2	_	_	_	_	_	-		CAN CINC 3
AIR PRESSURE	CAN COMM	CAN CIRC 1	-	_	_	_	_	_	-	_	CAN CIRC 2
MONITOR CC ase 10 ENGINE	CAN COMM COMM	CAN CIRC 1 CAN CIRC 1		CAN CMC 4 CAN CIRC 2	CAN CINC 3		CAN CIRC 6	_ 		CAN CIRC 8	
MONITOR ICC ase 10 ENGINE CVT	CAN COMM CAN CAN CAN CAN CAN	CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN	CAN CIRC 2 CAN	CMC 4 CAN CIRC 2 — CAN	CIM/C 3			_ 			CAN CINC 4 CAN CINC 4
MONITOR ICC ase 10 ENGINE CVT ABS SMART	CAN COMM CAN CAN CAN CAN CAN CAN	CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN	CAN CIRC 2 CAN CIRC 2 CAN	CMC 4 CAN CIRC 2 -	CAN CIRC 3 CAN CIRC 3 CAN CIRC 3				-		CAN CINC 4 -
MONITOR ICC ase 10 ENGINE CVT ABS SMART ENTRANCE AIR PRESSURE	CAN COMM CAN COMM CAN COMM CAN COMM	CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1	– CAN CIRC 2 CAN CIRC 2	CMC 4 CAN CIRC 2 — CAN CIRC 3	CAN CAN CIRC 3 CAN CIRC 3 CAN CIRC 3 -	CIRC 5	CIRC 6 — —				CAN CINC 4
MONITOR ICC ase 10 ENGINE CVT ABS SMART ENTRANCE AIR	CAN COMM CAN CAN CAN CAN CAN CAN CAN CAN	CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN	- CAN CIRC 2 CAN CIRC 2 CAN CIRC 2 - CAN	CMC 4 CAN CIRC 2 – CAN CIRC 3	CAN CIRC 3 CAN CIRC 3 CAN CIRC 3 - - - - - - CAN	CIRC 5	CIRC 6 — —			CIRC 8	CAN CINC 4 — CAN CINC 3
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MONITOR ICC ase 10 ENGINE CVT ABS SMART ENTRANCE AIR PRESSURE MONITOR ICC ase 11 ENGINE	CAN COMM CAN CAN CAN CAN CAN CAN CAN CAN CAN CAN	CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1	- CAN CIRC 2 CAN CIRC 2 CAN CIRC 2 - CAN	CAN CIRC 2 - CAN CIRC 3 - CAN CIRC 3 - CAN CIRC 4	CAN CIRC 3 CAN CIRC 3 CAN CIRC 3 - - - - CAN CIRC 3	CIRC 5	CIRC 6 			CIRC 8	CAN CIMC 4 - CAN CIMC 3 CAN CIMC 3 CAN CIMC 2 - -
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SMART ENTRANCE	CAN COMM	CAN CNC 1	CAN CNC 2	_	_	_	_	-		_	CAN CINC 3
AIR PRESSURE MONITOR	CAN COMM	CAN CIRC 1	-	-	-	-	-	—	-	-	CAN CIRC 2
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SMART	CAN	CAN	CAN	_	_	_	_	_		_	CAN
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ICC ase 18 ENGINE CVT ABS SMART ENTRANCE AIR PRESSURE MONITOR ICC ase 19 ENGINE CVT ABS	CAN CAN CAN CAN CAN CAN CAN CAN CAN CAN	CIRC 1 CAN CIRC 1	CIRC 2	CIRC 4 CAN CIRC 2 CAN CIRC 3 CAN CIRC 3 CAN CIRC 4	CIRC 3 CAN CIRC 3 CAN CIRC 3 - - - CAN CIRC 3 CAN CIRC 3 CAN	- CAN CIRC 5 - - -	CAN CIRC 6 - - - - - CAN CIRC 6		CAN CMC 6 - - - CAN CIRC 5 -		CIRC 4 CAN CIRC 4 - CAN CIRC 3 CAN CIRC 2 - CAN CIRC 2 CAN CIRC 4 CAN CIRC 4 CAN CIRC 4
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CVT	CAN COMM	CAN CIRC 1	CAN CIRC 2	-	CAN CIRC 3	-	—	-	-	-	CAN CINC 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 CINC 3
AIR PRESSURE MONITOR	CAN COMM	CAN CIRC 1	_	_	_	_	_	_	_	_	CAN CINC 2
ICC	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIBC 4	CAN CIRC 3	_	_	_	_	CAN CIRC 8	_
	CAN COMM	CAN CINC 1	_	CAN CINC 2	CAN CINC 3		CAN CINC 6		CAN CINC 5		CAN CINC 4
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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 <u>LAN-49, "Circuit Check Between TCM</u> and Data Link Connector"

Case 8:Check Harness between Data link connector and Smart entrance control unit. Refer to <u>LAN-50, "Circuit Check Between Data Link Connector and Smart Entrance Control Unit"</u>

Case 9:Check Harness between Smart entrance control unit and Tyre pressure monitoring control unit. Refer to <u>LAN-51</u>, "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 <u>LAN-51</u>, "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"

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Case 16:Check Smart entrance control unit Circuit. Refer to LAN-5		
Check" Case 17:Check Tyre pressure monitoring control unit Circuit. Refer to		Ą
trol Unit Circuit Check" Case 18:Check ICC unit Circuit. Refer to LAN-56, "ICC Unit Circuit Ch Case 19:Check ICC sensor Circuit. Refer to LAN-56, "ICC Sensor Cir	cuit Check"	В
Case 20:Check Combination meter Circuit. Refer to <u>LAN-57, "Combin</u> Case 21:Check CAN communication Circuit. Refer to LAN-58, "CAN (
Circuit Check Between TCM and Data Link Connec	(С
1. CHECK CONNECTOR	EKS004YM	
		D
 Turn ignition switch OFF. Disconnect the pagetive bettery terminal 		
 Disconnect the negative battery terminal. Check following terminals and connector for damage, bend and control unit-side and harness-side) 	loose connection. (control module-side,	E
 TCM. 		
ESP/TCS/ABS control unit.	F	F
 Between TCM and ESP/TCS/ABS control unit. 		
OK or NG		
OK >> GO TO 2. NG >> Repair terminal or connector.	C	G
-		
2. CHECK HARNESS FOR OPEN CIRCUIT	ŀ	Н
1. Disconnect TCM connector and harness connector F108.		
 Check continuity between TCM harness connector F103 termi- nals 5 (L), 6 (R) and harness connector F108 terminals 3 (L), 2 (R). 		I
5(L) – 3(L) : Continuity should exist.	TCM connector Harness connector	
6(R) – 2(R) : Continuity should exist. OK or NG	TCM O CONNECTOR 2 3	J
OK >> GO TO 3.		٩N
NG >> Repair harness.		
	PKIA0811E	
3. CHECK HARNESS FOR OPEN CIRCUIT	L	
Check continuity between harness connector M79 terminals 3 (L), 2 (R) and Data link connector M10 terminals 6 (L), 3 (R).		VI
3(L) – 6(L) : Continuity should exist.	Data link connector	
2(R) – 3(R) : Continuity should exist.	Harness connector	
OK or NG		
OK >> Reconnect all connectors to perform "SELF-DIAG RESULTS" and "DATA MONITOR" for "ENGINE",	<u>2, 3</u> <u>3, 6</u>	
"CVT", "ABS", "SMART ENTRANCE", "AIR PRESSURE	Ω	
MONITOR", and "ICC" displayed on CONSULT-II. Refer	PKIA0812E	
to <u>EC-1083, "DTC U1000, U1001 CAN COMMUNICA-</u> <u>TION LINE"</u> (WITH EURO-OBD) or <u>EC-1505, "DTC</u>	T NOUZL	
U1000, U1001 CAN COMMUNICATION LINE" (WITHOU		
to <u>CVT-118, "DTC U1000 CAN COMMUNICATION LINE"</u> MUNICATION LINE" (ALL) for "CVT". Refer to <u>BRC-10</u>		
Circuit, ESP/TCS/ABS Control Unit and Steering Angle	Sensor for "ABS". Refer to BCS-40,	
<u>"CAN Communication Line Check</u> for "SMART ENTR	ANCE". Refer to WT-35, "Inspection 4:	

<u>CAN Communication Line</u>" for "AIR PRESSURE MONITOR". Refer to <u>ACS-46</u>, "DTC 20 CAN <u>COMM CIRCUIT</u>" for "ICC".

NG >> Repair harness.

Circuit Check Between Data Link Connector and Smart Entrance Control Unit

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

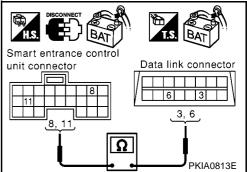
- 1. Disconnect smart entrance control unit connector.
- 2. Check continuity between smart entrance control unit harness connector M41 terminals 8 (L), 11 (R) and Data link connector M10 terminals 6 (L), 3 (R).
 - 8(L) 6(L) 11(R) - 3(R)

: Continuity should exist.

: Continuity should exist.

OK or NG

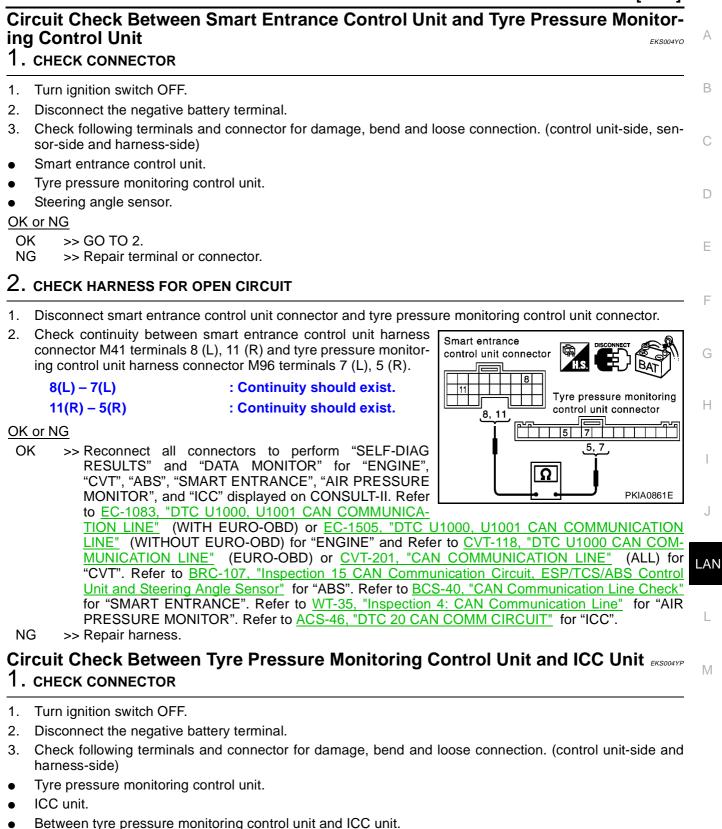
OK >> Reconnect all connectors to perform "SELF-DIAG RESULTS" and "DATA MONITOR" for "ENGINE", "CVT", "ABS", "SMART ENTRANCE", "AIR PRESSURE MONITOR", and "ICC" displayed on CONSULT-II. Refer to <u>EC-1083, "DTC U1000, U1001 CAN COMMUNICA-</u>



TION LINE" (WITH EURO-OBD) or EC-1505, "DTC U1000, U1001 CAN COMMUNICATION LINE" (WITHOUT EURO-OBD) for "ENGINE" and Refer to <u>CVT-118</u>, "DTC U1000 CAN COM-MUNICATION LINE" (EURO-OBD) or <u>CVT-201</u>, "CAN COMMUNICATION LINE" (ALL) for "CVT". Refer to <u>BRC-107</u>, "Inspection 15 CAN Communication Circuit, ESP/TCS/ABS Control Unit and Steering Angle Sensor" for "ABS". Refer to <u>BCS-40</u>, "CAN Communication Line Check" for "SMART ENTRANCE". Refer to <u>WT-35</u>, "Inspection 4: CAN Communication Line" for "AIR PRESSURE MONITOR". Refer to <u>ACS-46</u>, "DTC 20 CAN COMM CIRCUIT" for "ICC".

NG >> Repair harness.

[CAN]



OK or NG

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

EKS004YO

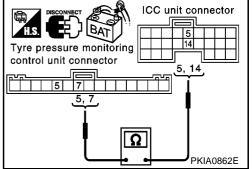
2. CHECK HARNESS FOR OPEN CIRCUIT

- 1. Disconnect tyre pressure monitoring control unit connector and ICC unit connector.
- Check continuity between tyre pressure monitoring control unit 2. 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 COMMUNICA-



TION 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 COM-MUNICÀTION LINE" (EURO-ÓBD) 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

- **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.

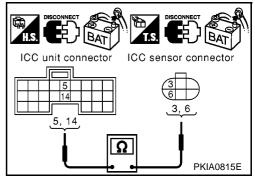
NG >> Repair terminal or connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

- Disconnect ICC unit connector and ICC sensor connector. 1.
- Check continuity between ICC unit harness connector B9 termi-2. nals 14 (L), 5 (R) and ICC sensor harness connector E53 terminals 3 (L), 6 (R).
 - 14(L) 3(L)
- 5(R) 6(R)
- : Continuity should exist. : 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 COMMUNICA-



TION 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 COM-MUNICATION 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

[C	AN]
Unit and Steering Angle Sensorfor "ABS". Refer to BCS-40, "CAN Communication Line CH for "SMART ENTRANCE". Refer to WT-35, "Inspection 4: CAN Communication Line" PRESSURE MONITOR". Refer to ACS-46, "DTC 20 CAN COMM CIRCUIT" for "ICC".NG>> Repair harness.	
ECM Circuit Check 1. CHECK CONNECTOR	EKS004YR
 Turn ignition switch OFF. Disconnect the negative battery terminal. Check terminals and connector of ECM for damage, bend and loose connection. (control module-side harness-side) OK or NG 	e and
OK >> GO TO 2. NG >> Repair terminal or connector.	
2. CHECK HARNESS FOR OPEN CIRCUIT	
 Disconnect ECM connector. 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. 86 94 94(L) - 86(R) PKIA0	
TCM Circuit Chook	EKS004YS
 Turn ignition switch OFF. Disconnect the negative battery terminal. Check terminals and connector of TCM for damage, bend and loose connection. (control module-side harness-side) OK or NG 	L e and
OK >> GO TO 2. NG >> Repair terminal or connector.	
2. CHECK HARNESS FOR OPEN CIRCUIT	
 Disconnect TCM connector. Check resistance between TCM harness connector F103 terminals 5(L) and 6(R). 5(L) - 6(R) : Approx. 54 - 66Ω OK or NG OK or NG OK >> Replace TCM. NG >> Repair harness between TCM and ECM. 	

ESP/TCS/ABS Control Unit Circuit Check

1. CHECK CONNECTOR

- 1. Turn ignition switch OFF.
- 2. Disconnect the negative battery terminal.
- 3. Check following terminals and connector for damage, bend and loose connection. (control 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

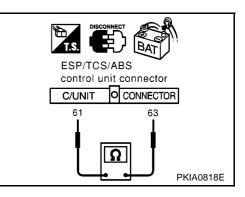
- 1. Disconnect ESP/TCS/ABS control unit connector.
- 2. Check resistance between ESP/TCS/ABS control unit harness connector B109 terminals 61(L) and 63(R).

61(L) - 63(R)

: **Approx. 54 – 66**Ω

OK or NG

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



EKS004YU

Steering Angle Sensor Circuit Check

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. (sensorside and harness-side)

OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

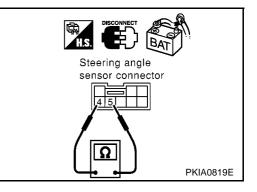
- 1. Disconnect steering angle sensor connector.
- Check resistance between steering angle sensor harness connector M33 terminals 4(L) and 5(R).

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.



[CAN]

EKS004YT

CAN STSTEM (TTPE T)	[CAN]
mart Entrance Control Unit Circuit Check	EKS004Y
. CHECK CONNECTOR	
. Turn ignition switch OFF.	
Disconnect the negative battery terminal.	
. Check terminals and connector of smart entrance control unit for damage, bend ar tion.(control unit-side and harness-side)	d loose connec
K or NG	
OK >> GO TO 2. NG >> Repair terminal or connector.	
. CHECK HARNESS FOR OPEN CIRCUIT	
Disconnect smart entrance control unit connector.	
. Check resistance between smart entrance control unit harness	
connector M41 terminals 8(L) and 11(R).	
8(L) - 11(R) : Approx. 54 - 66Ω Δis Smart entrance	
K or NG unit connector	
	181
OK >> Replace smart entrance control unit.	-+i+
NG >> Repair harness between steering angle sensor and	
NG >> Repair harness between steering angle sensor and	
NG >> Repair harness between steering angle sensor and smart entrance control unit.	PKIA0820E
NG >> Repair harness between steering angle sensor and smart entrance control unit.	
NG >> Repair harness between steering angle sensor and smart entrance control unit.	PKIA0820E EKS004YV
NG >> Repair harness between steering angle sensor and smart entrance control unit.	
 NG >> Repair harness between steering angle sensor and smart entrance control unit. yre Pressure Monitoring Control Unit Circuit Check CHECK CONNECTOR Turn ignition switch OFF. Disconnect the negative battery terminal. 	EKS004Yv
 NG >> Repair harness between steering angle sensor and smart entrance control unit. Tyre Pressure Monitoring Control Unit Circuit Check CHECK CONNECTOR Turn ignition switch OFF. Disconnect the negative battery terminal. Check terminals and connector of tyre pressure monitoring control unit for damage, ber 	EKS004Yv
 NG >> Repair harness between steering angle sensor and smart entrance control unit. yre Pressure Monitoring Control Unit Circuit Check CHECK CONNECTOR Turn ignition switch OFF. Disconnect the negative battery terminal. Check terminals and connector of tyre pressure monitoring control unit for damage, ber nection.(control unit-side and harness-side) 	EKS004Yv
 NG >> Repair harness between steering angle sensor and smart entrance control unit. Tyre Pressure Monitoring Control Unit Circuit Check CHECK CONNECTOR Turn ignition switch OFF. Disconnect the negative battery terminal. Check terminals and connector of tyre pressure monitoring control unit for damage, ber 	EKS004Yv
NG >> Repair harness between steering angle sensor and smart entrance control unit. yre Pressure Monitoring Control Unit Circuit Check . CHECK CONNECTOR Turn ignition switch OFF. Disconnect the negative battery terminal. Check terminals and connector of tyre pressure monitoring control unit for damage, ber nection.(control unit-side and harness-side) K or NG DK >> GO TO 2.	EKS004Yv
 NG >> Repair harness between steering angle sensor and smart entrance control unit. Tyre Pressure Monitoring Control Unit Circuit Check CHECK CONNECTOR Turn ignition switch OFF. Disconnect the negative battery terminal. Check terminals and connector of tyre pressure monitoring control unit for damage, ber nection.(control unit-side and harness-side) K or NG OK >> GO TO 2. 	EKS004Yv
 NG >> Repair harness between steering angle sensor and smart entrance control unit. Tyre Pressure Monitoring Control Unit Circuit Check CHECK CONNECTOR Turn ignition switch OFF. Disconnect the negative battery terminal. Check terminals and connector of tyre pressure monitoring control unit for damage, ber nection.(control unit-side and harness-side) W or NG OK >> GO TO 2. NG >> Repair terminal or connector. 	EKS004Yv
 NG >> Repair harness between steering angle sensor and smart entrance control unit. Yre Pressure Monitoring Control Unit Circuit Check CHECK CONNECTOR Turn ignition switch OFF. Disconnect the negative battery terminal. Check terminals and connector of tyre pressure monitoring control unit for damage, ber nection.(control unit-side and harness-side) K or NG OK >> GO TO 2. NG >> Repair terminal or connector. CHECK HARNESS FOR OPEN CIRCUIT Disconnect tyre pressure monitoring control unit connector. Check resistance between tyre pressure monitoring control unit 	EKS004Yv
 NG >> Repair harness between steering angle sensor and smart entrance control unit. yre Pressure Monitoring Control Unit Circuit Check CHECK CONNECTOR Turn ignition switch OFF. Disconnect the negative battery terminal. Check terminals and connector of tyre pressure monitoring control unit for damage, ber nection.(control unit-side and harness-side) K or NG OK >> GO TO 2. CHECK HARNESS FOR OPEN CIRCUIT Disconnect tyre pressure monitoring control unit connector. Check resistance between tyre pressure monitoring control unit for damage for the pressure monitoring control unit connector. 	EKS004Yv
 NG >> Repair harness between steering angle sensor and smart entrance control unit. Use Pressure Monitoring Control Unit Circuit Check CHECK CONNECTOR Turn ignition switch OFF. Disconnect the negative battery terminal. Check terminals and connector of tyre pressure monitoring control unit for damage, ber nection.(control unit-side and harness-side) K or NG OK >> GO TO 2. NG >> Repair terminal or connector. CHECK HARNESS FOR OPEN CIRCUIT Disconnect tyre pressure monitoring control unit connector. Check resistance between tyre pressure monitoring control unit harness connector M96 terminals 7(L) and 5(R). 7(L) - 5(R) : Approx. 54 - 66Ω 	d and loose con
 NG >> Repair harness between steering angle sensor and smart entrance control unit. Upre Pressure Monitoring Control Unit Circuit Check CHECK CONNECTOR Turn ignition switch OFF. Disconnect the negative battery terminal. Check terminals and connector of tyre pressure monitoring control unit for damage, ber nection.(control unit-side and harness-side) K or NG OK >> GO TO 2. NG >> Repair terminal or connector. CHECK HARNESS FOR OPEN CIRCUIT Disconnect tyre pressure monitoring control unit connector. Check resistance between tyre pressure monitoring control unit harness connector M96 terminals 7(L) and 5(R). 7(L) - 5(R) : Approx. 54 - 66Ω K or NG 	d and loose con
 NG >> Repair harness between steering angle sensor and smart entrance control unit. yre Pressure Monitoring Control Unit Circuit Check CHECK CONNECTOR Turn ignition switch OFF. Disconnect the negative battery terminal. Check terminals and connector of tyre pressure monitoring control unit for damage, ber nection.(control unit-side and harness-side) K or NG OK or NG CHECK HARNESS FOR OPEN CIRCUIT Disconnect tyre pressure monitoring control unit connector. Check resistance between tyre pressure monitoring control unit harness connector M96 terminals 7(L) and 5(R). 7(L) - 5(R) : Approx. 54 - 66Ω K or NG OK or NG 	d and loose con
 NG >> Repair harness between steering angle sensor and smart entrance control unit. Upre Pressure Monitoring Control Unit Circuit Check CHECK CONNECTOR Turn ignition switch OFF. Disconnect the negative battery terminal. Check terminals and connector of tyre pressure monitoring control unit for damage, ber nection.(control unit-side and harness-side) K or NG OK >> GO TO 2. NG >> Repair terminal or connector. CHECK HARNESS FOR OPEN CIRCUIT Disconnect tyre pressure monitoring control unit connector. Check resistance between tyre pressure monitoring control unit harness connector M96 terminals 7(L) and 5(R). 7(L) - 5(R) : Approx. 54 - 66Ω K or NG 	d and loose con
NG ⇒> Repair harness between steering angle sensor and smart entrance control unit. Syre Pressure Monitoring Control Unit Circuit Check • CHECK CONNECTOR • Turn ignition switch OFF. • Disconnect the negative battery terminal. • Check terminals and connector of tyre pressure monitoring control unit for damage, ber nection.(control unit-side and harness-side) • K or NG OK ⇒> GO TO 2. NG ⇒> Repair terminal or connector. • CHECK HARNESS FOR OPEN CIRCUIT • Disconnect tyre pressure monitoring control unit connector. • CHECK HARNESS FOR OPEN CIRCUIT • Disconnect tyre pressure monitoring control unit harness connector M96 terminals 7(L) and 5(R). • T(L) – 5(R) : Approx. 54 – 66Ω K or NG OK ⇒> Replace tyre pressure monitoring control unit. NG ⇒> Replace tyre pressure monitoring control unit.	d and loose con
NG >> Repair harness between steering angle sensor and smart entrance control unit. Tree Pressure Monitoring Control Unit Circuit Check CHECK CONNECTOR Turn ignition switch OFF. Disconnect the negative battery terminal. Check terminals and connector of tyre pressure monitoring control unit for damage, ber nection.(control unit-side and harness-side) <u>K or NG</u> DK $>>$ GO TO 2. NG $>>$ Repair terminal or connector. CHECK HARNESS FOR OPEN CIRCUIT Disconnect tyre pressure monitoring control unit connector. CHECK HARNESS FOR OPEN CIRCUIT Disconnect tyre pressure monitoring control unit connector. Check resistance between tyre pressure monitoring control unit harness connector M96 terminals 7(L) and 5(R). 7(L) - 5(R) : Approx. 54 - 66\Omega <u>K or NG</u> DK $>>$ Replace tyre pressure monitoring control unit. NG $>>$ Replace tyre pressure monitoring control unit.	d and loose con

ICC Unit Circuit Check

1. CHECK CONNECTOR

- 1. Turn ignition switch OFF.
- 2. Disconnect the negative battery terminal.
- 3. Check following terminals and connector for damage, bend and loose connection. (control 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.

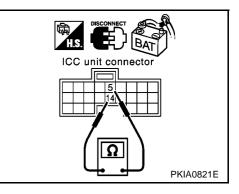
2. CHECK HARNESS FOR OPEN CIRCUIT

- 1. Disconnect ICC unit connector.
- 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.



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ICC Sensor Circuit Check

1. CHECK CONNECTOR

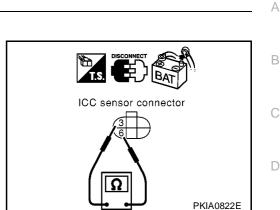
- 1. Turn ignition switch OFF.
- 2. Disconnect the negative battery terminal.
- 3. Check following terminals and connector for damage, bend and loose connection. (sensor-side and harness-side)
- ICC sensor.
- Harness connector E124.
- Harness connector M25.

OK or NG

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

[CAN]





Combination Meter Circuit Check

1. CHECK CONNECTOR

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

OK or NG

OK or NG OK >

NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

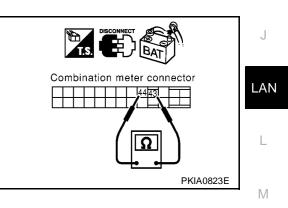
- 1. Disconnect combination meter connector.
- 2. Check resistance between combination meter harness connector M37 terminals 43(L) and 44(R).

43(L) - 44(R)

: Approx. 108 – 132 Ω

OK or NG

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



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).



: Approx. 54 – 66Ω

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EKS004YZ

CAN Communication Circuit Check

1. CHECK CONNECTOR

- 1. Turn ignition switch OFF.
- 2. Disconnect the negative battery terminal.
- 3. Check following terminals and connector for damage, bend and loose connection. (meter-side, sensorside, 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.
- 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 h
 - 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.
- Data link connector
- 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.



LAN-58

3. CHECK HARNESS FOR SHORT CIRCUIT

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

- 6(L) ground
- 3(R) ground

OK or NG

NG

OK >> GO TO 4. >> • 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.

: Continuity should not exist.

: Continuity should not exist.

• Repair harness between harness connector M89 and harness connector M79.

4. CHECK HARNESS FOR SHORT CIRCUIT

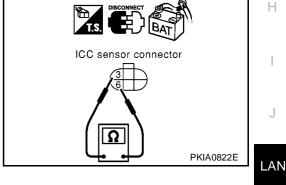
- Disconnect ICC sensor connector. 1.
- 2. Check continuity between ICC sensor harness connector E53 terminals 3 (L) and 6(R).

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

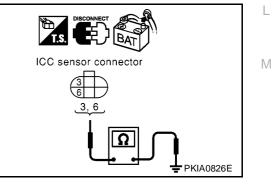
: Continuity should not exist.

6(R) – ground

: Continuity should not exist.

OK or NG

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



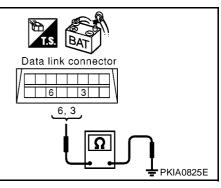
А

В

D

E

F



6. CHECK HARNESS FOR SHORT CIRCUIT

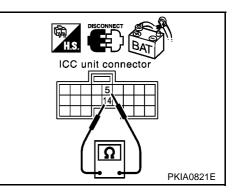
- 1. Disconnect ICC unit connector.
- 2. Check continuity between ICC unit harness connector B9 terminals 14 (L) and 5(R).

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.

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

: 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

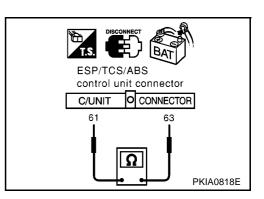
- Disconnect ESP/TCS/ABS control unit connector. 1.
- Check continuity between ESP/TCS/ABS control unit harness 2. connector B109 terminals 61 (L) and 63(R).

61(L) - 63(R)

OK or NG

OK >> GO TO 9.

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



9. CHECK HARNESS FOR SHORT CIRCUIT

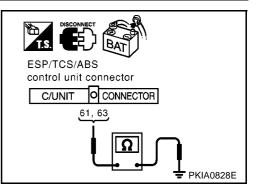
Check continuity between ESP/TCS/ABS control unit harness connector B109 terminals 61 (L), 63 (R) and ground.

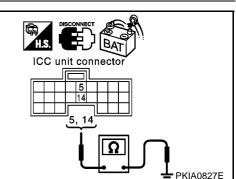
- 61(L) ground
- : Continuity should not exist.
- 63(R) ground

: 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

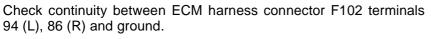
- 1. Disconnect ECM connector and TCM connector.
- 2. Check continuity between ECM harness connector F102 terminals 94 (L) and 86(R).
 - 94(L) 86(R)

: 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



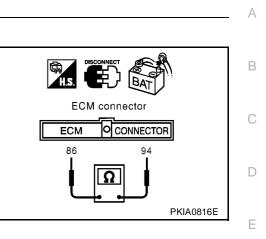
- 94(L) ground
- 86(R) ground
- : Continuity should not exist. : Continuity should not exist.
- OK or NG
- OK >> GO TO 12. NG
 - >> Repair harness between ECM and harness connector F108.
 - Repair harness between TCM and harness connector F108.

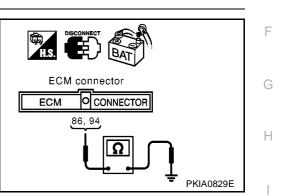
12. ECM / COMBINATION METER INTERNAL CIRCUIT INSPECTION

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" (WITH-L OUT 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 Μ 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.



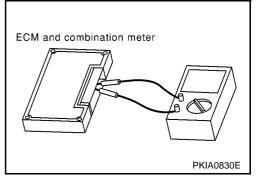


LAN

Component Inspection 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	Applox. 100 - 102

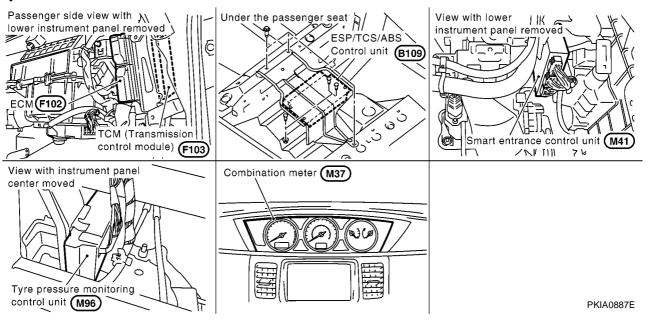


[CAN]

System Description

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

Component Parts and Harness Connector Location



LAN

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LAN-63

[CAN]

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EKS004Y3

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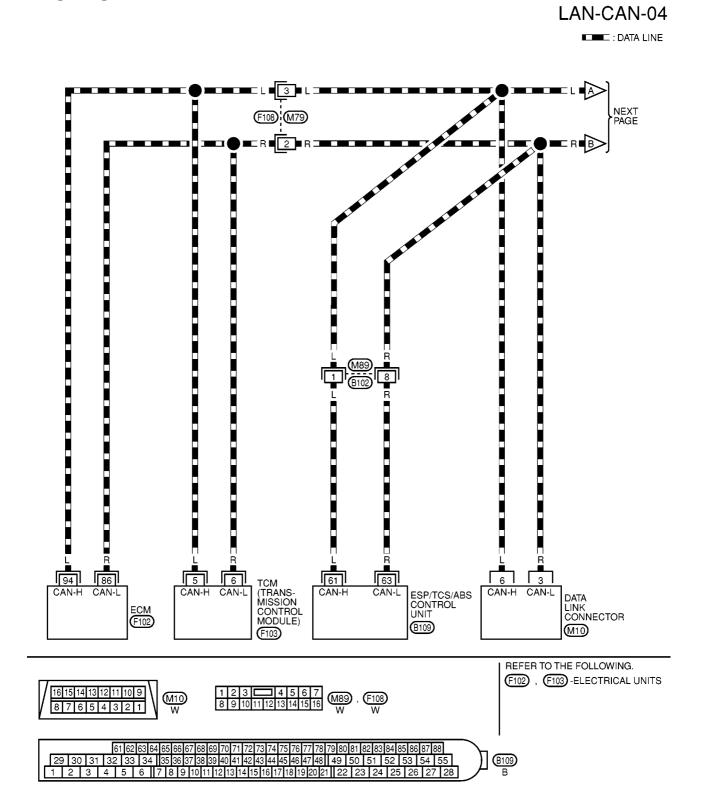
Ε

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EKS004Y4

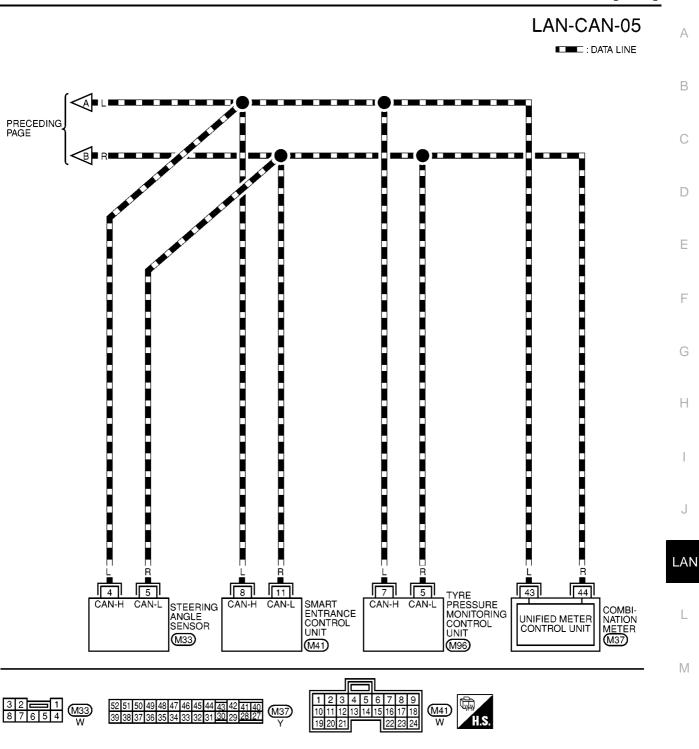
Wiring Diagram — CAN —



MKWA0222E



[CAN]



Б 15
14
13
12
11
10
9
8
7
6
5
4
3
2
1
М96

MKWA0223E

Work Flow

EKS004Y5

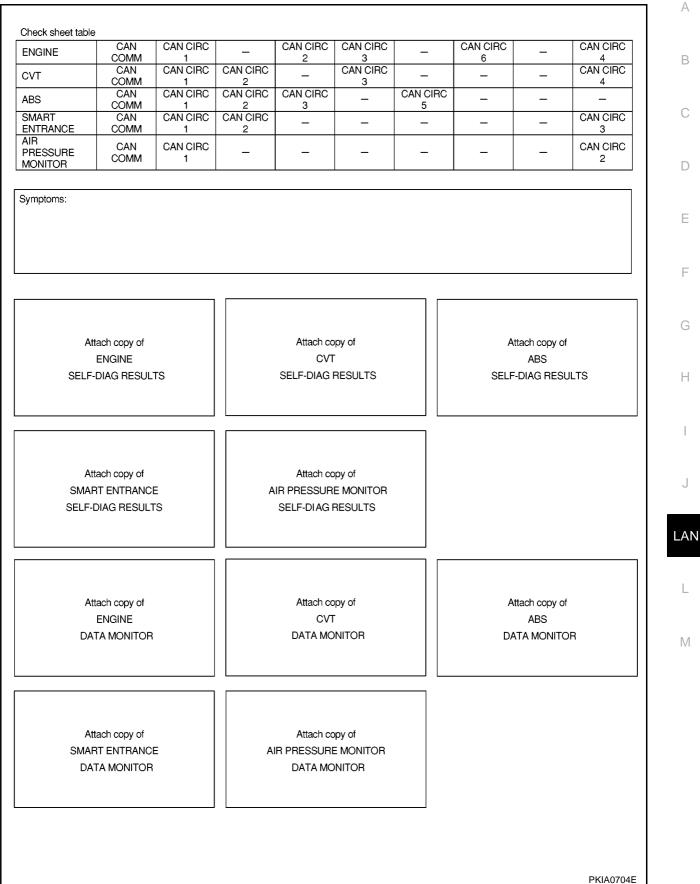
- Print all the data of "SELF-DIAG RESULTS" and "DATA MONITOR" for "ENGINE", "CVT", "ABS", "SMART ENTRANCE", and "AIR PRESSURE MONITOR" displayed on CONSULT-II. Refer to <u>EC-1083</u>, "<u>DTC</u> <u>U1000</u>, <u>U1001</u> CAN COMMUNICATION LINE" (WITH EURO-OBD) or <u>EC-1505</u>, "<u>DTC</u> <u>U1000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

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 <u>LAN-68, "CHECK SHEET</u> <u>RESULTS (EXAMPLE)"</u>

CHECK SHEET



CHECK SHEET RESULTS (EXAMPLE)

$\begin{array}{c c c c c c c c c c c c c c c c c c c $	ENGINE	CAN COMM	CAN CIRC	_	CAN CIRC 2	CAN CIRC 3	_	CAN CIRC 6	_	CAN CIRC 4
$ \begin{array}{c cccc} ABS & CAN & CAN CIRC & CAN CIRC & AN CIRC & 3 & - & S & - & - & - & - & - & - & - & -$	CVT	CAN	CAN CIRC		_	CAN CIRC	_	-	_	CAN CIRC
SMART CAN CAN CIRC CAN CIRC - - - - - CAN CIRC CAN CIRC -	ABS	CAN	CAN CIRC	CAN CIRC		_		_	_	
$\begin{array}{c c c c c c c c c c c c c c c c c c c $		CAN		CAN CIRC	_	_	_	-	_	CAN CIRC 3
ENGINE COMM 1 -	AIR PRESSURE			_	_	_	_	_	_	CAN CIRC 2
ENGINE COMM 1 -			1							
CV1 COMM 1 2 - 3 - - - 4 ABS CAN CAN CIRC CAN CIRC CAN CIRC CAN CIRC -	ENGINE			_			_	CANORC	-	
$\begin{array}{c cccc} ABS & CAN & CAN CIRC & CAN CIRC & 2 & 3 & - & CAN CIRC & - & - & - & - & - & - & - & - & - & $	сут				_		_	_	_	CAN CIR
$\begin{array}{c c c c c c c c c c c c c c c c c c c $	ABS	CAN		CAN CIRC				_	_	_
NR PRESSURE MONITOR CAN COMM CAN CIRC 1 - - - - - - CAN CIRC 2 ase 2: Replace TCM INGINE CAN COMM CAN CIRC 1 - CAN ORC 3 - CAN CIRC 6 - CAN CIRC 4 INGINE CAN COMM 1 - CAN CIRC 2 - CAN CIRC 3 - CAN CIRC 6 - CAN CIR 4 VT COMM 1 2 - CAN CIRC 4 - <td>SMART ENTRANCE</td> <td>CAN</td> <td></td> <td>CAN CIRC</td> <td>_</td> <td>-</td> <td>_</td> <td>_</td> <td>_</td> <td>CAN CIR 3</td>	SMART ENTRANCE	CAN		CAN CIRC	_	-	_	_	_	CAN CIR 3
ISE 2: Replace TCM INGINE CAN CAN CIRC - CAN CIRC CAN CIRC 3 - CAN CIRC 4 COMM 1 - CAN CIRC CAN CIRC - CAN CIRC 3 4 INGINE COMM 1 - 2 - CAN CIRC	AIR PRESSURE			_	_	_	_	-	_	CAN CIR 2
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ABSCAN COMMCAN CIRC 1CAN CIRC 2CAN ORC 2_CAN CIRC 5SMART ENTRANCECAN COMMCAN CIRC 1CAN CIRC 2 </td <td></td> <td>CAN</td> <td>CAN CIRC</td> <td></td> <td>CAN QIRC</td> <td>CAN CIRC</td> <td></td> <td>CAN CIRC</td> <td></td> <td>CAN CIR</td>		CAN	CAN CIRC		CAN QIRC	CAN CIRC		CAN CIRC		CAN CIR
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CAN CAN CIRC - - - - - - CAN CIRC 2 MONITOR CAN CAN CIRC 1 - - - - - - - 2 2 ENGINE CAN CAN CIRC - CAN CIRC 2 3 - 6 - CAN CIRC 4 ENGINE CAN CAN CIRC - CAN CIRC - 6 - 4 EVT CAN CAN CIRC CAN CIRC - CAN CIRC - - - 4 ABS CAN CAN CIRC CAN CIRC - CAN CIRC - - - - - - - CAN CIRC - - - - CAN CIRC - - - - - CAN CIRC -	VT	CAN COMM CAN COMM CAN	1 CAN CIRC 1 CAN CIRC 1	2 CAN CIRC 2	∀ -	3 CAN CIRC				4 CAN CIF
ENGINE COMM 1 - 2 3 - 6 - 4 CVT CAN CAN CIRC CAN OIRC - CAN OIRC - - 4 ABS CAN CAN CIRC CAN CIRC - CAN CIRC - - CAN OF MBS CAN CAN CIRC CAN CIRC - CAN CIRC - <	SVT ABS SMART	CAN COMM CAN CAN CAN CAN CAN	1 CAN CIRC 1 CAN CIRC 1 CAN CIRC	2 CAN CIRC 2 CAN CIRC	∀ -	3 CAN CIRC			-	CAN CIF 4 CAN CIF
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COMM 1 V V V ABS CAN CAN CIRC CAN CIRC CAN CIRC COMM 1 2 3 SMART CAN CAN CIRC	ABS SMART ENTRANCE AIR PRESSURE	CAN COMM CAN CAN COMM CAN CAN CAN COMM	1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1	2 CAN CIRC 2 CAN CIRC		3 CAN CIRC 3 - -		6 -	-	4 CAN CIR 4 CAN CIR 3 CAN CIR 2
ABS COMM 1 2 3 - 5	OVT ABS SMART ENTRANCE AIR PRESSURE MONITOR	CAN COMM CAN COMM CAN COMM CAN COMM CAN COMM	1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1	2 CAN CIRC 2 CAN CIRC 2 -	CAN CIRC	3 CAN CIRC 3 - - - CAN CIRC 3		6 — — — — — — — —	-	4 CAN CIR 4 CAN CIR 3 CAN CIR 2 CAN CIR 2 CAN CIR 4
SMART CAN CAN CIRC CAN CIRC CAN CIF	CVT ABS MART ENTRANCE NR PRESSURE MONITOR ENGINE	CAN COMM CAN CAN CAN CAN CAN CAN CAN CAN CAN CAN	1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC	2 CAN CIRC 2 CAN CIRC 2 -	CAN CIRC	3 CAN CIRC 3 - - - CAN CIRC 3		6 — — — — — — — —		4 CAN CIR 4 CAN CIR 3 CAN CIR 2 CAN CIR 2 CAN CIR 4
	CVT ABS SMART ENTRANCE AIR PRESSURE MONITOR ENGINE ENGINE	CAN COMM CAN CAN COMM CAN CAN COMM CAN COMM CAN CAN CAN CAN CAN	1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC	2 CAN CIRC 2 CAN CIRC 2 - - CAN CIRC CAN CIRC	CAN O'RC - CAN CIRC 2 CAN CIRC 2 CAN CIRC	3 CAN CIRC 3 - - - CAN CIRC 3	5 - - - - - - - - -	6 — — — — — — — —		4 CAN CIR 4 CAN CIR 3 CAN CIR 2 CAN CIR

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AIR PRESSURE MONITOR

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ENGINE	CAN COMM	CAN CIRC	-	CAN CIRC 2	CANORC	-	CAN CIRC 6	_	CAN CIRC 4
CVT	CAN COMM	CAN CIRC	CAN CIRC 2	_	CANORC	_	_	_	CAN CIRC 4
ABS	CAN COMM	CAN CIRC	CAN CIRC	CAN CIRC 3	-	CAN CIRC 5	-	_	
SMART ENTRANCE	CAN COMM	CAN CIRC	CAN CIRC 2	-	-	_	-	-	CAN CIRC 3
AIR PRESSURE MONITOR	CAN COMM	CAN CIRC 1	_	_	_	_	_	_	CAN CIRC 2
			1			1			
ENGINE	CAN COMM	CAN CIRC	-	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	CANORC	CANORC	-	CANORC	-	_	-
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2	_	_	_	_	_	CAN CIRC 3
		CAN CIRC						_	CAN CIRC
AIR PRESSURE MONITOR		e control unit		CAN CIRC	CAN CIRC				2
PRESSURE MONITOR	COMM	e control unit							
PRESSURE MONITOR	COMM Smart entranc CAN COMM	e control unit CAN CIRC		CAN CIRC 2	3		CAN CIRC 6		CAN CIRC 4
PRESSURE MONITOR ase 4: Replace : ENGINE	COMM Smart entranc CAN COMM CAN COMM	e control unit CAN CIRC 1 CAN CIRC 1	– CAN CIRC 2	2					CAN CIRC
PRESSURE MONITOR	COMM Smart entranc CAN COMM CAN CAN CAN COMM	e control unit CAN CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC	2 CAN CIRC 2		3 CAN CIRC	_ CAN CIRC 5			CAN CIRC 4 CAN CIRC 4 –
PRESSURE MONITOR ase 4: Replace : ENGINE CVT ABS SMART ENTRANCE	COMM Smart entranc CAN COMM CAN COMM CAN	e control unit CAN CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC	2 CAN CIRC	2 — CAN CIRC	3 CAN CIRC				CAN CIRC 4 CAN CIRC 4
PRESSURE MONITOR	COMM Smart entranc CAN COMM CAN CAN CAN COMM	e control unit CAN CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC	2 CAN CIRC 2 CAN CIRC	2 — CAN CIRC	3 CAN CIRC				CAN CIRC 4 CAN CIRC 4 — CAN CIRC
PRESSURE MONITOR	COMM Smart entranc CAN COMM CAN CAN CAN CAN CAN CAN CAN CAN CAN	1 e control unit CAN CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1	2 CAN CIRC 2 CAN CIRC	2 — CAN CIRC 3 —	3 CAN CIRC 3 - -		6 -		CAN CIRC 4 CAN CIRC 4 CAN CIRC 3 CAN CIRC 2
PRESSURE MONITOR ase 4: Replace : ENGINE CVT ABS SMART ENTRANCE AIR PRESSURE MONITOR	COMM Smart entranc CAN COMM CAN COMM CAN CAN CAN CAN CAN CAN CAN	e control unit CAN CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC	2 CAN CIRC 2 CAN CIRC	2 CAN CIRC 3 - CAN CIRC	3 CAN CIRC		6 		CAN CIRC 4 CAN CIRC 4 CAN CIRC 3 CAN CIRC
PRESSURE MONITOR	COMM Smart entranc CAN COMM CAN COMM CAN CAN CAN CAN CAN CAN CAN COMM	1 e control unit CAN CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC	2 CAN CIRC 2 CAN CIRC 2 - CAN CIRC 2	2 — CAN CIRC 3 —	3 CAN CIRC 3 - - - CAN CIRC		6 -		CAN CIRC 4 CAN CIRC 4 CAN CIRC 3 CAN CIRC 2 CAN CIRC
PRESSURE MONITOR ase 4: Replace : ENGINE CVT ABS SMART ENTRANCE AIR PRESSURE MONITOR ENGINE CVT	COMM Smart entranc CAN COMM CAN COMM CAN COMM CAN COMM CAN COMM CAN COMM CAN COMM	1 e control unit CAN CIRC 1 CAN CIRC	2 CAN CIRC 2 CAN CIRC 2 - CAN CIRC 2 CAN CIRC 2 CAN CIRC	2 — CAN CIRC 3 — — CAN CIRC 2 — CAN CIRC 2 — CAN CIRC	3 CAN CIRC 3 - - - CAN CIRC 3 CAN CIRC	5 — — — — — — — — — —	6 		CAN CIRC 4 CAN CIRC 4 CAN CIRC 3 CAN CIRC 2 CAN CIRC 2
PRESSURE MONITOR	COMM Smart entranc CAN COMM CAN COMM CAN COMM CAN COMM CAN COMM	1 e control unit CAN CIRC 1 CAN CIRC	2 CAN CIRC 2 CAN CIRC 2 - CAN CIRC 2	2 CAN CIRC 3 - CAN CIRC 2 -	3 CAN CIRC 3 - - - CAN CIRC 3 CAN CIRC	5 	6 	-	CAN CIRC 4 CAN CIRC 4 CAN CIRC 3 CAN CIRC 2 CAN CIRC 4 CAN CIRC 4 CAN CIRC 4

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Case 5: Replace Tyre pressure monitoring control unit CAN CIRC CAN CIRC CAN CIRC CAN CIRC CAN CAN CIRC ENGINE _ _ _ COMM 2 3 6 4 1 CAN CIRC CAN CIRC CAN CIRC CAN CIRC CAN CVT _ _ COMM 1 2 3 4 CAN CIRC CAN CIRC CAN CIRC CAN CIRC CAN _ ABS _ — _ COMM 1 2 3 5 SMART CAN CAN CIRC CAN CIRC CAN CIRC _ _ _ _ _ ENTRANCE COMM 2 3 1 AIR CAN COMM CAN CIRC CAN CIRC PRESSURE _ _ _ _ _ _ 1 2 MONITOR

Case 6

Case o									
ENGINE	CAN COMM	CAN CIRC 1	_	CAN CIRC 2	CANORC	-	CANORC	_	
сут	CAN COMM	CAN CIRC 1	CAN CIRC 2	_		_	_	_	
ABS	CAN COMM	CAN CIRC			_	CAN CIRC 5	Ι	_	_
SMART ENTRANCE	CAN COMM	CAN CIRC 1		_	_	_	_	_	CAN CIRC 3
AIR PRESSURE MONITOR	CAN COMM	CAN CIRC 1	_	_	_	_	_	_	CAN CIRC 2

Case 7

MONITOR

		1			I			
CAN	CAN CIRC	_	CAN CIRC	CAN CIRC	_	CANCARC	_	CANCRC
COMM	1	_	2	3	_	V	_	V
CAN	CAN CIRC	CAN CIRC	_	CAN CIRC	_	_		CAN CARC
COMM	1	2	_	3	_	_	_	V
CAN	CAN CIRC	CAN CIRC	CAN CIRC		CAN CARC			
COMM	1	2	3	_	V	_	_	_
CAN	CAN CIRC	CAN QARC						CAN CIRC
COMM	1	Y	_	_	_	_	-	3
CAN								CAN CIRC
-		_	_	_	-	_	-	
COMM	1							2
	CAN COMM CAN COMM CAN	COMM 1 CAN CAN CIRC COMM 1 CAN CAN CIRC	COMM 1 CAN CAN CIRC COMM 1 2 CAN CAN CIRC CAN CAN CIRC	COMM 1 - 2 CAN CAN CIRC CAN CIRC - COMM 1 2 - CAN CAN CIRC CAN CIRC - CAN CAN CIRC CAN CIRC CAN CIRC COMM 1 2 3 CAN CAN CIRC CAN ORC - COMM 1 - - CAN CAN CIRC - - CAN CAN CIRC _ _	COMM 1 2 3 CAN CAN CIRC CAN CIRC 3 CAN CAN CIRC CAN CIRC	COMM 1 2 3 CAN CAN CIRC CAN CIRC 3	COMM 1 2 3 CAN CAN CIRC CAN CIRC CAN CIRC CAN CAN CIRC CAN CIRC 3	COMM 1 - 2 3 -

Case 8 CAN CAN CIRC CAN CIRC CAN ORC CAN CIRC CAN CIRC ENGINE _ _ COMM 2 3 6 1 CAN CIRC CAN CIRC CAN CIRC CAN CANORC CVT _ _ _ _ COMM 1 2 3 CAN CIRC CAN CAN CIRC CAN CIRC CAN CIRC ABS _ _ _ COMM 2 1 3 5 CAN ORC SMART CAN CAN CIRC CAN CIRC _ _ _ _ _ ENTRANCE COMM 1 2 AIR CAN CIRC CAN CAN CIRC PRESSURE _ _ _ _ _ _ COMM 1 2

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[CAN]

ENGINE	CAN COMM	CANCIRC	-			-		-	
СVТ	CAN COMM	CAN CIRC 1		-	CAN CIRC 3	-	_	-	CAN CIRC 4
ABS	CAN COMM	CAN CIRC 1	CANORC	CAN CIRC 3	_	CAN CIRC 5	_	-	-
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CANORC	_	_	-	_	-	CAN CIRC 3
AIR PRESSURE MONITOR	CAN COMM	CAN CIRC 1	_	_	_	_	_	_	CAN CIRC 2

Case 10

Case IU									
ENGINE	CAN COMM	CAN CIRC 1	_	CANORC	CAN CIRC 3	-	CAN CIRC 6	-	CAN CIRC 4
СVТ	CAN COMM			—		_	_	_	CANCRC
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 11	
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Case II									
ENGINE	CAN COMM	CAN CIRC 1	_	CAN CIRC 2		_	CAN CIRC 6	_	CAN CIRC 4
СVТ	CAN COMM	CAN CIRC 1	CAN CIRC 2	_		_	_	-	CAN CIRC 4
ABS	CAN COMM	CANCIRC			-		-	-	-
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2	_	-	_	_	Ι	CAN CIRC 3
AIR PRESSURE MONITOR	CAN COMM	CAN CIRC 1	_	_	_	_	_	_	CAN CIRC 2

Case 12

0436 12									
ENGINE	CAN COMM	CAN CIRC 1	_	CAN CIRC 2	CAN CIRC 3	-	CAN CIRC 6	-	CAN CIRC 4
СVТ	CAN COMM	CAN CIRC 1	CAN CIRC 2	_	CAN CIRC 3	_	_	-	CAN CIRC 4
ABS	CAN COMM	CAN CIRC	CAN CIRC 2	CAN CIRC 3	_		_	-	_
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2	_	_	_	_	_	CAN CIRC 3
AIR PRESSURE MONITOR	CAN COMM	CAN CIRC 1	_	_	_	_	_	_	CAN CIRC 2

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[CAN]

ase 13	CAN			CAN CIRC					CAN CIRC
ENGINE	COMM	CAN CIRC 1			3	-	CANORC	-	4
СЛТ	CAN COMM	1 1	CAN CIRC 2	2	CAN CIRC 3	-	-	-	CAN CIRC 4
ABS	CAN COMM	CAN CIRC	CAN CIRC 2	CAN CIRC 3	-	CAN CIRC 5	_	_	_
SMART ENTRANCE	CAN COMM	CANORC	2 CAN ORC	_	-	_	-	_	
AIR PRESSURE MONITOR	CAN COMM	CAN CIRC 1	_	_	_	_	_	_	CAN CIRC 2
ase 14 ENGINE	CAN COMM	CAN CIRC	_	CAN CIRC 2	3	_	CAN CIRC 6	_	CAN CIRC 4
СЛТ	CAN COMM	CAN CIRC		_	CAN CIRC	_	_	_	CAN CIRC 4
ABS	CAN COMM	1	2	CAN CIRC 3	_	CAN CIRC 5	_	_	_
SMART ENTRANCE	CAN COMM	CAN CIRC	CAN CIRC 2	_	_	_	-	_	CAN CIRC 3
AIR PRESSURE MONITOR	CAN COMM	CANCRC	_	-	-	_	-	_	
ase 15									
ENGINE	CAN COMM	CAN CIRC		CAN CIRC 2	3	-	CAN CIRC 6	-	
CVT	CAN COMM	CAN CIRC 1	CAN CIRC 2	2 – CAN CIRC	CAN CIRC 3	_	_	-	
ABS	CAN COMM	CAN CIRC	2	CAN CIRC 3	-	CAN CIRC 5	-	-	
SMART ENTRANCE	CAN COMM	CAN CIRC	CAN CIRC 2	-	-	_	_	-	
AIR PRESSURE MONITOR	CAN COMM	CAN CIRC 1	_	_	_	_	_	-	
ase 16 ENGINE	CAN COMM	CANCIRC	-	CANORC	CANORC	_	CANCIRC	_	
СVТ	CAN COMM	CANCIRC	CANORC	-	CANCIRC	_	_	_	
ABS	CAN	CAN C/RC	CANORC	CANCIRC		CANORC			

ABS COMM V ¥ ¥ CANCIRC CAN COMM SMART CAN C/RC CAN C/RC _ _ _ _ _ ENTRANCE AIR CAN COMM PRESSURE _ _ _ _ _ _ MONITOR

PKIA0709E

NOTE:

If "NG" is displayed on "CAN COMM" for the diagnosed control unit, replace the control unit.

LAN-72

		[CAN]	
INSPECTION			
Proceed trouble diagnosis accordin Case 1:Replace ECM. Case 2:Replace TCM.	g to the check sheet results (exan	nple).	А
Case 3:Replace ESP/TCS/ABS cor			В
Case 4:Replace Smart entrance co			
Case 5:Replace Tyre pressure mon Case 6:Check Harness between TC and Data Link Connector"		to LAN-73, "Circuit Check Between TCM	С
		ance control unit. Refer to LAN-74, "Cir-	
Case 8:Check Harness between Sr to LAN-75, "Circuit Check Between Case 9:Check ECM Circuit. Refer to	mart entrance control unit and Tyre Smart Entrance Control Unit and D LAN-75, "ECM Circuit Check"	e pressure monitoring control unit. Refer Tyre Pressure Monitoring Control Unit"	D
Case 10:Check TCM Circuit. Refer Case 11:Check ESP/TCS/ABS co Check"		76, "ESP/TCS/ABS Control Unit Circuit	Е
Case 12:Check Steering angle sense	sor Circuit. Refer to <u>LAN-77, "Stee</u> ontrol unit Circuit. Refer to <u>LAN-7</u>	ering Angle Sensor Circuit Check" 77, "Smart Entrance Control Unit Circuit	F
	toring control unit Circuit. Refer to	LAN-78, "Tyre Pressure Monitoring Con-	
Case 15:Check Combination meter Case 16:Check CAN communicatio			G
Circuit Check Between TC	M and Data Link Connec	ctor EKS004Y6	Н
1. CHECK CONNECTOR			
 Turn ignition switch OFF. Disconnect the negative battery 	/ terminal.		I
control unit-side and harness-s		loose connection. (control module-side,	J
TCM.ESP/TCS/ABS control unit.		_	
 Between TCM and ESP/TCS/A 	BS control unit		LA
OK or NG			L/ \
OK >> GO TO 2.			1
NG >> Repair terminal or conr			L
2. CHECK HARNESS FOR OPEN	N CIRCUIT		
1. Disconnect TCM connector and	d harness connector F108.		Μ
	A harness connector F103 termi- connector F108 terminals 3 (L), 2		
5(L) – 3(L)	: Continuity should exist.	TCM connector Harness connector	
6(R) – 2(R)	: Continuity should exist.		
OK or NG		5, 6 2, 3	
OK >> GO TO 3. NG >> Repair harness.		PKIA0811E	

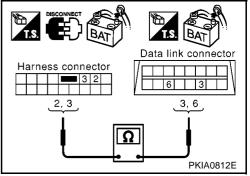
3. CHECK HARNESS FOR OPEN CIRCUIT

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)
- 2(R) 3(R)
- : Continuity should exist.
- : 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 PRES-SURE 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-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

- Turn ignition switch OFF. 1.
- 2. Disconnect the negative battery terminal.
- Check following terminals and connector for damage, bend and loose connection. (control unit-side, sen-3. sor-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.
- Check continuity between smart entrance control unit harness 2. connector M41 terminals 8 (L), 11 (R) and Data link connector M10 terminals 6 (L), 3 (R).
 - 8(L) 6(L)

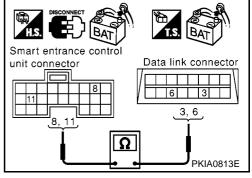
: Continuity should exist.

11(R) - 3(R)

: Continuity should exist.

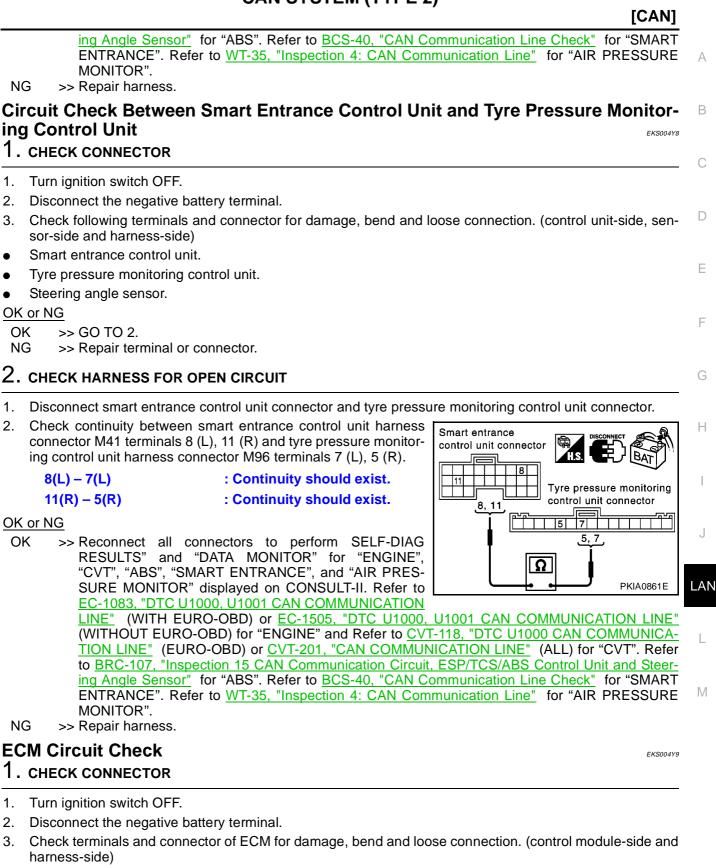
OK or NG

OK >> Reconnect all connectors to perform SELF-DIAG RESULTS" and "DATA MONITOR" for "ENGINE", "CVT", "ABS", "SMART ENTRANCE", and "AIR PRES-SURE 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 COMMUNICA-TION 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-

LAN-74



OK or NG

NG

1.

2.

3.

OK or NG

OK or NG

OK

NG

1. 2.

OK

NG

1.

2

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

$\overline{2}$. CHECK HARNESS FOR OPEN CIRCUIT

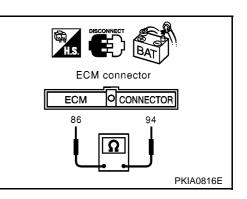
- 1. Disconnect ECM connector.
- Check resistance between ECM harness connector F102 terminals 94(L) and 86(R).

94(L) - 86(R)

: **Approx. 108 – 132**Ω

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.

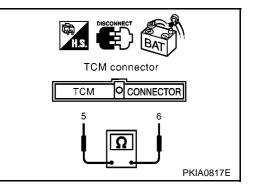
2. CHECK HARNESS FOR OPEN CIRCUIT

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

: Approx. 54 – 66 Ω

OK or NG

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



EKS004YB

ESP/TCS/ABS Control Unit Circuit Check

1. CHECK CONNECTOR

- 1. Turn ignition switch OFF.
- 2. Disconnect the negative battery terminal.
- 3. Check following terminals and connector for damage, bend and loose connection. (control 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.

$\overline{2}$. CHECK HARNESS FOR OPEN CIRCUIT

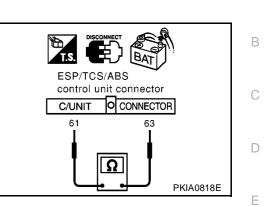
- 1. Disconnect ESP/TCS/ABS control unit connector.
- 2. Check resistance between ESP/TCS/ABS control unit harness connector B109 terminals 61(L) and 63(R).

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.



EKS004YC

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Steering Angle Sensor Circuit Check

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. (sensorside and harness-side)

OK or NG

OK >> GO TO 2. NG >> Repair ter

G >> Repair terminal or connector.

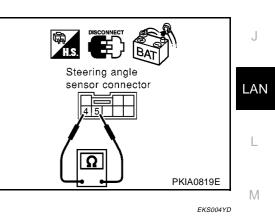
2. CHECK HARNESS FOR OPEN CIRCUIT

- 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)

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

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.

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2. CHECK HARNESS FOR OPEN CIRCUIT

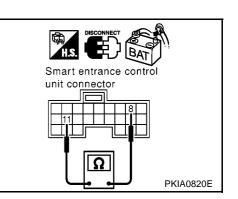
- 1. Disconnect smart entrance control unit connector.
- 2. Check resistance between smart entrance control unit harness connector M41 terminals 8(L) and 11(R).

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. Turn ignition switch OFF.

1. CHECK CONNECTOR

- 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.

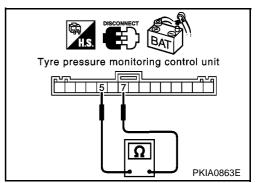


1. CHECK CONNECTOR

- 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.



EKS004YF

2. CHECK HARNESS FOR OPEN CIRCUIT

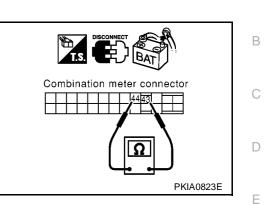
- 1. Disconnect combination meter connector.
- 2. Check resistance between combination meter harness connector M37 terminals 43(L) and 44(R).

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.



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CAN Communication Circuit Check

1. CHECK CONNECTOR

F Turn ignition switch OFF. 1. 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. Н Smart entrance control unit. Steering angle sensor. ESP/TCS/ABS control unit. TCM. ECM. J Between ESP/TCS/ABS control unit and ECM. OK or NG OK >> GO TO 2. LAN NG >> Repair terminal or connector.

LAN-79

[CAN]

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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.
- 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

- >> 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

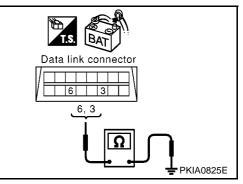
Check continuity between Data link connector M10 terminals 6 (L), 3(R) and ground.

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

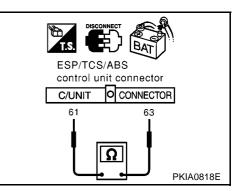
- 1. Disconnect ESP/TCS/ABS control unit connector.
- Check continuity between ESP/TCS/ABS control unit harness connector B109 terminals 61 (L) and 63(R).

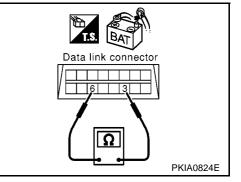
61(L) - 63(R)

: 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
- 63(R) ground

: Continuity should not exist.

: Continuity should not exist.

- 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.

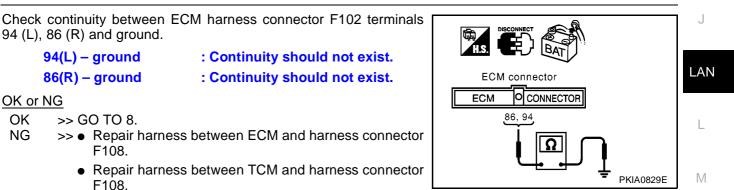
OK or NG

OK 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



8. ECM / COMBINATION METER INTERNAL CIRCUIT INSPECTION

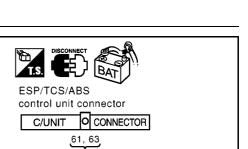
Check components inspection. Refer to LAN-82, "ECM / COMBINATION METER INTERNAL CIRCUIT **INSPECTION**"

OK or NG

OK

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 <u>CVT-118</u>, "<u>DTC U1000 CAN COMMUNICATION LINE</u>" (EURO-OBD) or <u>CVT-201</u>, "<u>CAN COMMUNICATION LINE</u>" (ALL) for "CVT". Refer to <u>BRC-107</u>, "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.



ECM connector

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ECM

86

CONNECTOR

94

PKIA0828E

PKIA0816E

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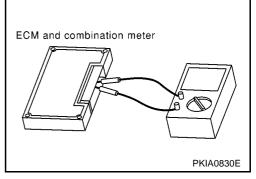
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Component Inspection ECM / COMBINATION METER INTERNAL CIRCUIT INSPECTION

- 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	Applox. 100 - 102

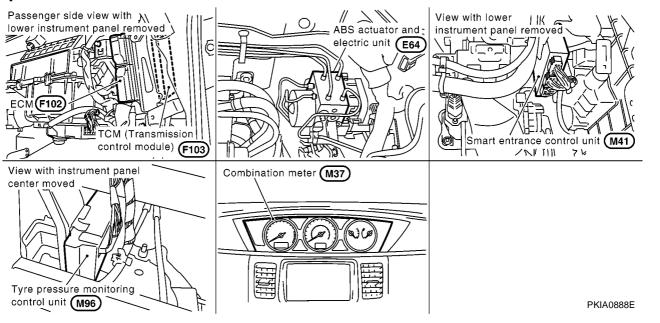


EKS004YH

System Description

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

Component Parts and Harness Connector Location



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PFP:23710

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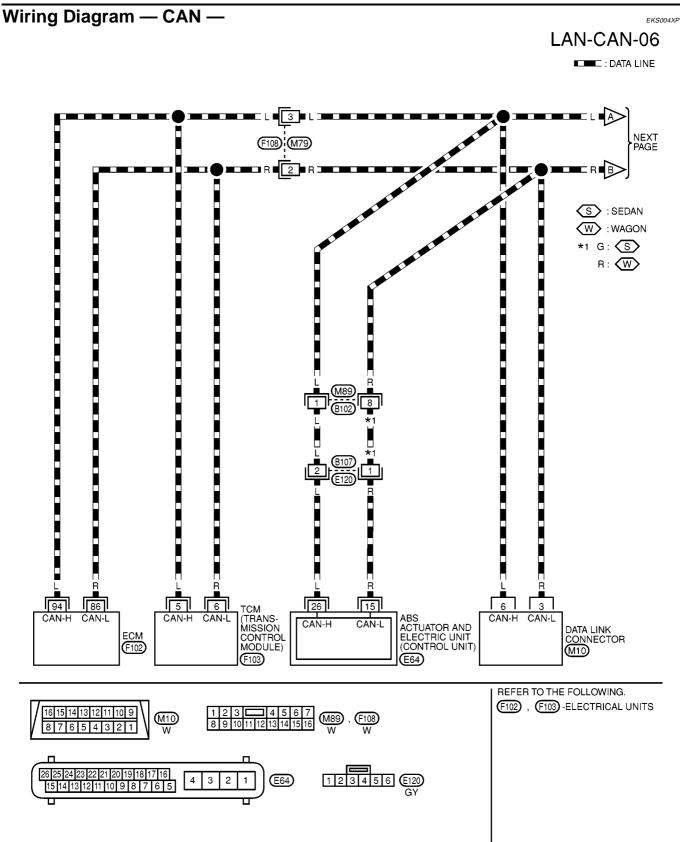
В

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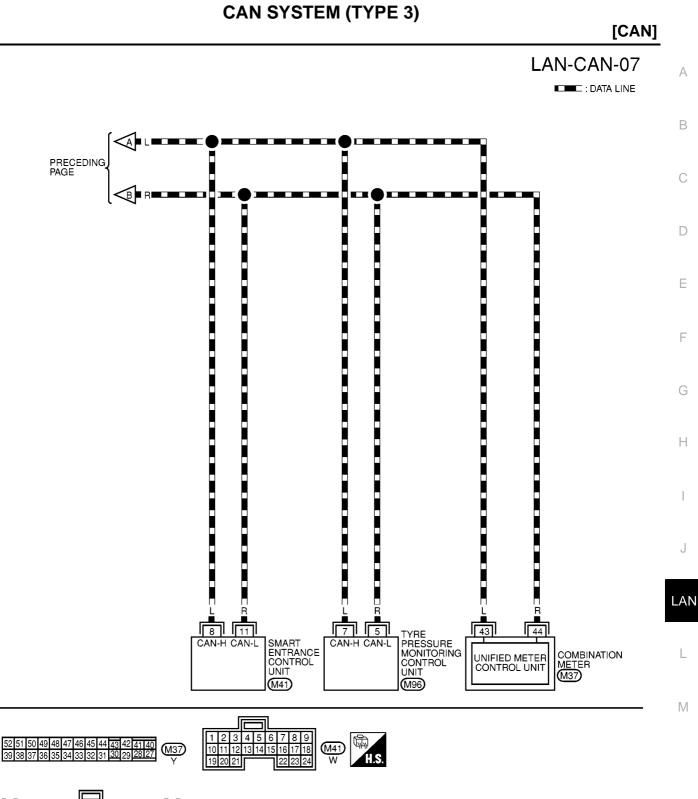
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MKWA0224E



1514131211109876543211 (M96)

MKWA0225E

Work Flow

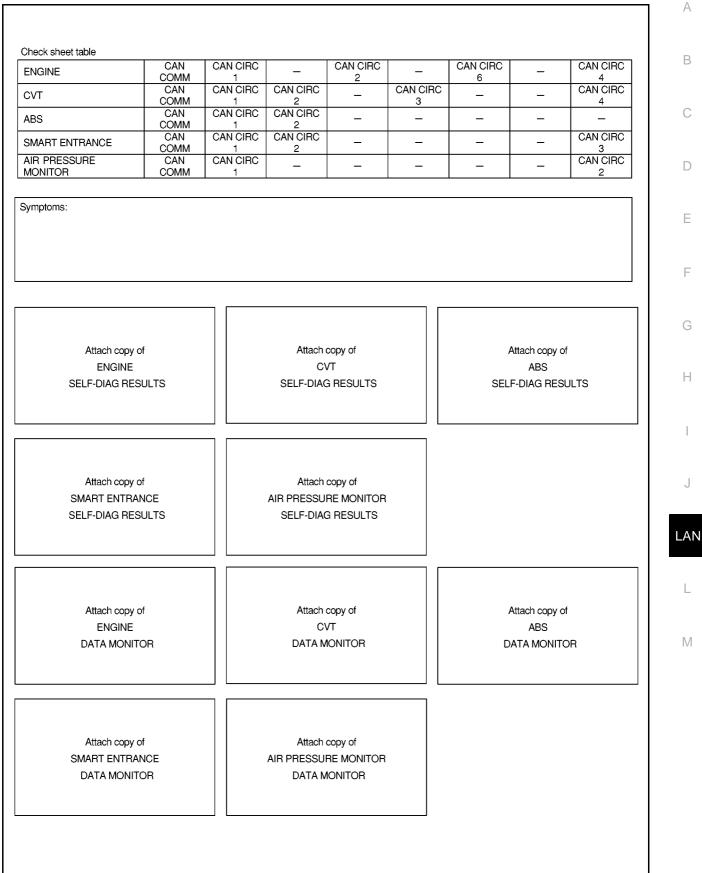
- EKS004XQ 1. Print all the data of "SELF-DIAG RESULTS" and "DATA MONITOR" for "ENGINE", "CVT", "ABS", "SMART ENTRANCE", and "AIR PRESSURE MONITOR" displayed on CONSULT-II. Refer to EC-1083, "DTC U1000, U1001 CAN COMMUNICATION LINE" (WITH EURO-OBD) or EC-1505, "DTC U1000, U1001 CAN COMMUNICATION LINE" (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 <u>BRC-33, "CAN Communication Circuit"</u> for "ABS". Refer to <u>BCS-40, "CAN Communi-</u> cation 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



PKIA0710E

CHECK SHEET RESULTS (EXAMPLE)

CAN

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AIR PRESSURE MONITOR

CAN CIRC

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Case 1: Replace ECM

ENGINE	CAN COMM	CAN CIRC	-	CAN CIRC 2	_	CAN CIRC 6	_	CAN CIRC 4
сут	CAN COMM	CAN CIRC 1	CAN CIRC 2	_	CAN CIRC 3	-	-	CAN CIRC 4
ABS	CAN COMM	CAN CIRC	CAN CIRC 2	-	-	_	_	-
SMART ENTRANCE	CAN COMM	CAN CIRC	CAN CIRC 2	-	-	_	_	CAN CIRC 3
AIR PRESSURE MONITOR	CAN COMM	CAN CIRC 1	_	_	_	_	_	CAN CIRC 2
ENGINE	CAN COMM	CAN CIRC 1	-		-	CANORC	-	CANORC
СVТ	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	CAN CIRC 2	_	_	_	_	CAN CIRC 3
	CAN	CAN CIRC			_	_	_	CAN CIRC
AIR PRESSURE MONITOR		1						2
MONITOR	COMM				 			
MONITOR	COMM CAN COMM	CAN CIRC	_			CAN CIRC 6		CAN CIRC
MONITOR	COMM CAN COMM CAN	1 CAN CIRC 1 CAN CIRC 1	– CAN CIRC 2		– CAN CIRC 3			CAN CIRC
MONITOR ase 2: Replace TCM ENGINE CVT	COMM CAN COMM	1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1	2 CAN CIRC 2			6	 	CAN CIRC 4 CAN CIRC
MONITOR ase 2: Replace TCM ENGINE CVT ABS	COMM CAN COMM CAN COMM CAN	1 CAN CIRC 1 CAN CIRC 1 CAN CIRC	2 CAN CIRC		3	6 —	_	CAN CIRC 4 CAN CIRC
MONITOR ase 2: Replace TCM ENGINE	COMM CAN COMM CAN CAN COMM CAN CAN	1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC	2 CAN CIRC 2 CAN CIRC		3	6 —	_	CAN CIRC 4 CAN CIRC 4 - CAN CIRC
MONITOR ase 2: Replace TCM ENGINE CVT ABS SMART ENTRANCE AIR PRESSURE	COMM CAN COMM CAN CAN CAN COMM CAN COMM CAN COMM	1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1	2 CAN CIRC 2 CAN CIRC	_ _ _ _	3	6 -	_	CAN CIRC 4 CAN CIRC 4 CAN CIRC 3 CAN CIRC 2
MONITOR ase 2: Replace TCM ENGINE CVT ABS SMART ENTRANCE AIR PRESSURE	COMM CAN COMM CAN COMM CAN CAN CAN CAN CAN CAN CAN CAN COMM	1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1	2 CAN CIRC 2 CAN CIRC 2 -	CAN OFRC - - - CAN CIRC 2	3 	6 —	_	CAN CIRC 4 CAN CIRC 4 CAN CIRC 3 CAN CIRC 2 CAN CIRC 4
MONITOR ase 2: Replace TCM ENGINE CVT ABS SMART ENTRANCE AIR PRESSURE MONITOR ENGINE	COMM CAN COMM CAN CAN CAN CAN COMM CAN COMM CAN COMM	1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC	2 CAN CIRC 2 CAN CIRC 2 -	- - - - - CAN CIRC	3	6 - - CAN CIRC	-	CAN CIRC 4 CAN CIRC 4 CAN CIRC 3 CAN CIRC 2 CAN CIRC 4
MONITOR ase 2: Replace TCM ENGINE CVT ABS SMART ENTRANCE AIR PRESSURE MONITOR	COMM CAN COMM CAN COMM CAN CAN CAN CAN CAN CAN CAN CAN CAN COMM	1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC	2 CAN CIRC 2 CAN CIRC 2 -	- - - - - CAN CIRC	3 	6 - - CAN CIRC 6	- - - -	CAN CIRC 4 CAN CIRC 4 CAN CIRC 3 CAN CIRC 2 CAN CIRC

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ase 3: Replace ABS actua	tor and electric ι	unit (control unit)					
ENGINE	CAN COMM	CAN CIRC	_	CAN CIRC 2	_	CAN CIRC 6	_	CAN CIRC
CVT	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	_	CAN CIRC 2	_	CAN CIRC 6	_	CAN CIRC
CVT	CAN	CAN CIRC	CAN CIRC	_	CAN CIRC 3	_	_	CAN CIRC
ABS	CAN COMM	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
ase 4: Replace Smart entr								
				CAN CIBC				
	CAN COMM	CAN CIRC 1		CAN CIRC 2		CAN CIRC 6	_	CAN CIRC 4
ENGINE CVT	CAN COMM CAN COMM	CAN CIRC 1 CAN CIRC 1	- CAN CIRC 2		– CAN CIRC 3		_ _	4
ENGINE	CAN COMM CAN COMM CAN COMM	CAN CIRC 1 CAN CIRC 1 CAN CIRC 1	2 CAN CIRC 2				_ _ _	4 CAN CIRC 4 —
ENGINE CVT ABS SMART ENTRANCE	CAN COMM CAN COMM CAN COMM CAN	CAN CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1	2 CAN CIRC	2	3		-	4 CAN CIRC 4 — CAN CIRC 3
ENGINE	CAN COMM CAN COMM CAN COMM	CAN CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC	2 CAN CIRC 2 CAN CIRC	2	3		- - - -	4 CAN CIRC 4 — CAN CIRC 3
ENGINE CVT ABS SMART ENTRANCE AIR PRESSURE	CAN COMM CAN COMM CAN COMM CAM CAM	CAN CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC	2 CAN CIRC 2 CAN CIRC	2	3			4 CAN CIRC 4 CAN CIRC 3 CAN CIRC 2
ENGINE CVT ABS SMART ENTRANCE AIR PRESSURE MONITOR	CAN COMM CAN CAN COMM CAN CAM CAM CAM CAN CAN	CAN CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC	2 CAN CIRC 2 CAN CIRC	2 CAN CIRC	3	6 — — — — — — — — — — — — —	- - - - - -	4 CAN CIRC 4 CAN CIRC 3 CAN CIRC 2 CAN CIRC
ENGINE CVT ABS SMART ENTRANCE AIR PRESSURE MONITOR ENGINE CVT	CAN COMM CAN COMM CAN COMM CAN COMM CAN COMM	CAN CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC	2 CAN CIRC 2 CAN CIRC 2 - CAN CIRC 2 CAN CIRC 2 CAN CIRC 2	2 CAN CIRC	3 CAN CIRC	6 — — — — — — — — — — — — —	- - - - - - -	4 CAN CIRC 4 CAN CIRC 3 CAN CIRC 2 CAN CIRC 4 CAN CIRC 4 CAN CIRC 4 CAN CIRC
ENGINE CVT ABS SMART ENTRANCE AIR PRESSURE MONITOR ENGINE	CAN COMM CAN COMM CAN COMM CAN COMM CAN CAN CAN CAN CAN CAN CAN	CAN CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC	2 CAN CIRC 2 CAN CIRC 2 - - CAN CIRC 2 CAN CIRC	2 CAN CIRC 2 	3 CAN CIRC 3	6 — — — — — — — — — — — — —	- - - - - - - - - -	4 CAN CIRC 4 CAN CIRC 3 CAN CIRC 2 CAN CIRC 4 CAN CIRC

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LAN-89

001414	CAN CIRC	_	CAN CIRC	_	CAN CIRC	_	CAN CIRC
COMM CAN	1 CAN CIRC	CAN CIRC	2	CAN CIRC	6		4 CAN CIRC
COMM	1	2	-	3	_	-	4
CAN COMM	CAN CIRC	CAN CIRC 2	-	-	-	-	-
CAN COMM	CAN CIRC	CAN CIRC 2	_	_	_	_	CAN CIRC 3
CAN COMM	CAN CIRC 1	_	_	_	_	_	CAN CIRC 2
CAN	CAN CIRC	_	CAN CIRC	_	CAN CIRC	_	CANCARC
CAN	CAN CIRC	CAN CIRC	_	CAN CARC	-	_	
CAN	CAN CIRC	CANORC	_	_	_	_	-
CAN COMM	CAN CIRC 1		_	_	_	_	CAN CIRC 3
CAN COMM	CAN CIRC 1	_	_	_	-	_	CAN CIRC 2
CAN	CAN CIRC	_	CAN CIRC	_	CANORC		CANCRO
CAN	1 CAN CIRC	CAN CIRC	2	CAN CIRC	-	_	CAN C/RC
CAN	CAN CIRC	CAN CIRC	_	3	_	_	
CAN	CAN CIRC	CAN C/RC	_	_	_	_	CAN CIRC
CAN	CAN CIRC		_	_	_	_	CAN CIRC
					I I		2
CAN COMM	CAN CIRC	_	CAN CIRC 2	_	CAN CIRC 6	_	
CAN	CAN CIRC	CAN CIRC 2	_	CAN CIRC 3	_	-	CANCRO
COMM	1		i			_	_
	1 CAN CIRC 1	CAN CIRC 2	_	_	_		
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Case 9

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ENGINE	CAN COMM		_		_		_	
CVT	CAN COMM	CAN CIRC 1		-	CAN CIRC 3	-	-	CAN CIRC 4
ABS	CAN COMM	CAN CIRC 1		_	-	_	_	_
SMART ENTRANCE	CAN COMM	CAN CIRC 1		_	_	_	_	CAN CIRC 3
AIR PRESSURE MONITOR	CAN COMM	CAN CIRC 1	_	_	_	_	_	CAN CIRC 2

Case 10

Jase IU								
ENGINE	CAN COMM	CAN CIRC 1	_	CANORC	_	CAN CIRC 6	_	CAN CIRC 4
СVТ	CAN COMM			_		-	_	
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

C	ase	1	1

		0.411.010.0				0.111.010.0			
ENGINE	CAN	CAN CIRC	_	CAN CIRC	_	CAN CIRC	_	CAN CIRC	
ENGINE	COMM	1		2		6		4	
CVT	CAN	CAN CIRC	CAN CIRC	CAN CIRC		CAN CARC			CAN CIRC
CVI	COMM	1	2	_	Y	-	—	4	
ABS	CAN	CAN CARC	CANOTRO						
ADS	COMM	✓	Y I	_	_	_	_	_	
	CAN	CAN CIRC	CAN CIRC					CAN CIRC	
SMART ENTRANCE	COMM	1	2	_	_	_	—	3	
AIR PRESSURE	CAN	CAN CIRC						CAN CIRC	
MONITOR	COMM	1	_	_	_	_	—	2	

.._.

Case 12

ENGINE	CAN COMM	CAN CIRC 1	_	CAN CIRC 2	-	CANORC	-	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			_	-	_	_	CANCIRC
AIR PRESSURE MONITOR	CAN COMM	CAN CIRC 1	-	_	1	-	_	CAN CIRC 2

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Case 13

ENGINE	CAN COMM	CAN CIRC 1	_	CAN CIRC 2	-	CAN CIRC 6	-	CAN CIRC 4
СVТ	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		_	_	_	_	_	

Case 14								
ENGINE	CAN	CAN CIRC	_	CAN CIRC	_	CAN CIRC	_	CAN C/RC
-	COMM	1		2		6		
сут	CAN	CAN CIRC	CAN CIRC	_	CAN CIRC	_	_	CANCARC
	COMM	1	2	_	3	_	_	V 1
ABS	CAN	CAN CIRC	CAN CIRC					
ADS	COMM	1	2	_	_	_	_	_
SMART ENTRANCE	CAN	CAN CIRC	CAN CIRC					CANCARC
SMARTENTRANCE	COMM	1	2	_	—	_	—	Y
AIR PRESSURE	CAN	CAN CIRC						CAN CARC
MONITOR	COMM	1	_	_	_	_	-	Y

ENGINE	CAN COMM	CANCRC	-		-		_	
СVТ	CAN COMM	CAN CIRC		-	CANCIRC	-	_	CAN CIRC
ABS	CAN COMM	CANORC		-	-	-	_	-
SMART ENTRANCE	CAN COMM	CANORC		_	-	-	_	CANORC
AIR PRESSURE MONITOR	CAN COMM	CANORC	-	_	-	-	_	CANORC

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 <u>LAN-93, "Circuit Check Between TCM</u> and <u>Data Link Connector"</u>

Case 7:Check Harness between Data link connector and Smart entrance control unit. Refer to <u>LAN-94, "Circuit Check Between Data Link Connector and Smart Entrance Control Unit"</u>

[CAN]

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LAN-92

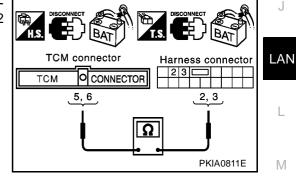
[CAN]	
Case 8:Check Harness between Smart entrance control unit and Tyre pressure monitoring control unit. Refer to LAN-94, "Circuit Check Between Smart Entrance Control Unit and Tyre Pressure Monitoring Control Unit"	
Case 9:Check ECM Circuit. Refer to LAN-95, "ECM Circuit Check"	
Case 10:Check TCM 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 Elec-	ſ
tric Unit (control unit) Circuit Check"	
Case 12:Check Smart entrance control unit Circuit. Refer to LAN-97, "Smart Entrance Control Unit Circuit	
<u>Check</u>	
Case 13:Check Tyre pressure monitoring control unit Circuit. Refer to <u>LAN-97, "Tyre Pressure Monitoring Con-</u> trol 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	
1. CHECK CONNECTOR	
	F
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)	ŀ
• 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.	ŀ
NG >> Repair terminal or connector.	

2. CHECK HARNESS FOR OPEN CIRCUIT

- Disconnect TCM connector and harness connector F108. 1.
- 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)
 - 6(R) 2(R)
- : Continuity should exist.
- : Continuity should exist.

OK or NG

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



3. check harness for open circuit

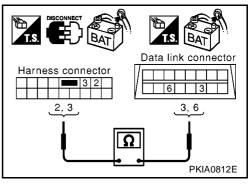
Check continuity between harness connector M79 terminals 3 (L), 2 (R) and Data link connector M10 terminals 6 (L), 3 (R).

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

- - : Continuity should exist.



OK >> Reconnect all connectors to perform "SELF-DIAG and "DATA MONITOR" for "ENGINE", RESULTS" "CVT", "ABS", "SMART ENTRANCE", and "AIR PRES-SURE 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-

LAN-93

[CAN]

<u>CATION LINE</u>" (ALL) for "CVT". Refer to <u>BRC-33</u>, "<u>CAN Communication Circuit</u>" for "ABS". Refer to <u>BCS-40</u>, "<u>CAN Communication Line Check</u>" for "SMART ENTRANCE". Refer to <u>WT-35</u>, "<u>Inspection 4</u>: <u>CAN Communication Line</u>" 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



NG >> Repair terminal or connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

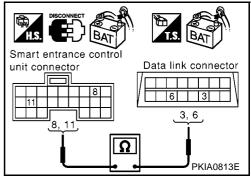
- 1. Disconnect smart entrance control unit connector.
- Check continuity between smart entrance control unit harness connector M41 terminals 8 (L), 11 (R) and Data link connector M10 terminals 6 (L), 3 (R).

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

: 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 PRES-SURE MONITOR" displayed on CONSULT-II. Refer to <u>EC-1083, "DTC U1000, U1001 CAN COMMUNICATION</u>



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 COMMUNICA-TION 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

- 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.

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Tyre pressure monitoring

control unit connector

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В



1. Disconnect smart entrance control unit connector and tyre pressure monitoring control unit connector.

: Continuity should exist.

: Continuity should exist.

- 2. Check continuity between smart entrance control unit harness Smart entrance connector M41 terminals 8 (L), 11 (R) and tyre pressure monitorcontrol unit connector ing control unit harness connector M96 terminals 7 (L), 5 (R).
 - 8(L) 7(L)
 - 11(R) 5(R)

OK or NG

ູ5, 7 OK >> Reconnect all connectors to perform "SELF-DIAG RESULTS" and "DATA MONITOR" for "ENGINE", "CVT", "ABS", "SMART ENTRANCE", and "AIR PRES-Ω PKIA0861E SURE MONITOR" displayed on CONSULT-II. Refer to E 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 COMMUNICA-TION LINE" (EURO-OBD) or <u>CVT-201</u>, "CAN COMMUNICATION LINE" (ALL) for "CVT". Refer to <u>BRC-33</u>, "CAN Communication Circuit" for "ABS". Refer to <u>BCS-40</u>, "CAN Communication E Line Check" for "SMART ENTRANCE". Refer to WT-35, "Inspection 4: CAN Communication Line" for "AIR PRESSURE MONITOR".

ີ <u>8,</u> 11

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NG >> Repair harness.

ECM Circuit Check

- 1. CHECK CONNECTOR
- Turn ignition switch OFF. 1.
- 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

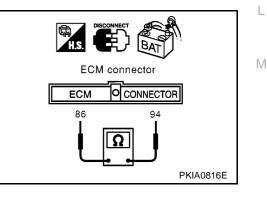
- 1. Disconnect ECM connector.
- Check resistance between ECM harness connector F102 termi-2. nals 94(L) and 86(R).

94(L) - 86(R)

: Approx. 108 – 132 Ω

OK or NG

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



TCM Circuit Check

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.

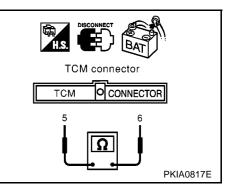
2. CHECK HARNESS FOR OPEN CIRCUIT

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

5(L) - 6(R)

OK or NG

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



ABS Actuator and Electric Unit (control unit) Circuit Check

: Approx. 54 – 66 Ω

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.

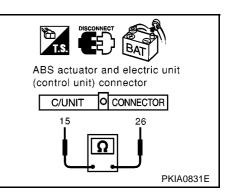
2. CHECK HARNESS FOR OPEN CIRCUIT

- 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** – **66**Ω

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).



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CAN STSTEM (TTPE 3)	[CAN]
mart Entrance Control Unit Circuit Chook	
Smart Entrance Control Unit Circuit Check	EK\$004XX
. Turn ignition switch OFF.	
. Disconnect the negative battery terminal.	
 Check terminals and connector of smart entrance control unit for damage, bend tion.(control unit-side and harness-side) 	and loose connec-
DK or NG	
OK >> GO TO 2.	
NG >> Repair terminal or connector.	
2. CHECK HARNESS FOR OPEN CIRCUIT	
. Disconnect smart entrance control unit connector.	
 Check resistance between smart entrance control unit harness connector M41 terminals 8(L) and 11(R). 	
$8(L) - 11(R) \qquad : Approx. 54 - 66\Omega$	
O(E) = O(X) . Applox. $34 = 0022$	ince control
OK or NG unit connect	
DK or NG unit connect OK >> Replace smart entrance control unit.	
DK or NG unit connector OK >> Replace smart entrance control unit. NG >> Repair harness between Data link connector and smart entrance control unit.	
OK or NG unit connector OK >> Replace smart entrance control unit. NG >> Repair harness between Data link connector and smart	
OK or NG OK >> Replace smart entrance control unit. NG >> Repair harness between Data link connector and smart entrance control unit.	PKIA0820E
<u>DK or NG</u> Unit connector OK >> Replace smart entrance control unit. NG >> Repair harness between Data link connector and smart entrance control unit. Image: state of the state o	
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 1. CHECK CONNECTOR	PKIA0820E
OK or NG OK >> Replace smart entrance control unit. NG >> Repair harness between Data link connector and smart entrance control unit. Fyre Pressure Monitoring Control Unit Circuit Check 1. CHECK CONNECTOR 1. Turn ignition switch OFF.	PKIA0820E
OK or NG OK >> Replace smart entrance control unit. NG >> Repair harness between Data link connector and smart entrance control unit. Fyre Pressure Monitoring Control Unit Circuit Check 1. CHECK CONNECTOR 1. Turn ignition switch OFF. 2. Disconnect the negative battery terminal.	PKIA0820E
OK or NG OK >> Replace smart entrance control unit. NG >> Repair harness between Data link connector and smart entrance control unit. Fyre Pressure Monitoring Control Unit Circuit Check 1. CHECK CONNECTOR 1. Turn ignition switch OFF. 2. Disconnect the negative battery terminal.	PKIA0820E
 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 CHECK CONNECTOR Turn ignition switch OFF. Disconnect the negative battery terminal. Check terminals and connector of tyre pressure monitoring control unit for damage, to nection.(control unit-side and harness-side) OK or NG 	PKIA0820E
 <u>OK or NG</u> 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 CHECK CONNECTOR Turn ignition switch OFF. Disconnect the negative battery terminal. Check terminals and connector of tyre pressure monitoring control unit for damage, to nection.(control unit-side and harness-side) <u>OK or NG</u> OK >> GO TO 2. 	PKIA0820E
 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 CHECK CONNECTOR Turn ignition switch OFF. Disconnect the negative battery terminal. Check terminals and connector of tyre pressure monitoring control unit for damage, to nection.(control unit-side and harness-side) OK >> GO TO 2. NG >> GO TO 2. 	PKIA0820E
 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 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, to nection.(control unit-side and harness-side) OK or NG OK >> GO TO 2. 	PKIA0820E
 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 CHECK CONNECTOR Turn ignition switch OFF. Disconnect the negative battery terminal. Check terminals and connector of tyre pressure monitoring control unit for damage, to nection.(control unit-side and harness-side) OK or NG OK >> GO TO 2. NG >> Repair terminal or connector. 	PKIA0820E
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 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, to nection.(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 HARNESS FOR OPEN CIRCUIT 1. Disconnect tyre pressure monitoring control unit connector.	PKIA0820E
DK or NG With the connector of the connector. Init connect the connector of the connector of the connector. Image: NG Sepair harness between Data link connector and smart entrance control unit. Init connect the connector of the connector of the connector. Image: NG Sepair harness between Data link connector and smart entrance control unit. Init connect the connector of the connector of the connector. Image: NG Sepair terminals and connector of the connector of the connector. Init connect the connector. Image: NG Sepair terminal or connector. Init connector.<	PKIA0820E
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 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, to nection.(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 tonnector. 2. Check resistance between tyre pressure monitoring control unit tonnector. 2. Check resistance between tyre pressure monitoring control unit tonnector. 2. Check resistance between tyre pressure monitoring control unit tonnector. 2. Check resistance between tyre pressure monitoring control unit tonnector. 2. Check resistance between tyre pressure monitoring control unit tonnector. 2. Check resistance between tyre pressure monitoring control unit tonnector. 2. Check resistance between tyre pressure monitoring control unit tonnector. 2. () - 5 (R) : Approx. 5 4	PKIA0820E
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 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, to nection.(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 namess connector M96 terminals 7(L) and 5(R). 7(L) - 5(R) : Approx. 54 - 66Ω OK or NG	PKIA0820E
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 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, to nection.(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). T(L) - 5(R) : Approx. 54 - 66Ω OK or NG OK >> Replace tyre pressure monitoring control unit.	PKIA0820E
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 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, to nection.(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 namess connector M96 terminals 7(L) and 5(R). 7(L) - 5(R) : Approx. 54 - 66Ω OK or NG	PKIA0820E
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 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, to nection.(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 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). T(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	PKIA0820E
OK or NG OK >> Replace smart entrance control unit. NG >> Repair harness between Data link connector and smart entrance control unit. Fyre Pressure Monitoring Control Unit Circuit Check 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, to nection.(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). $T(L) - 5(R)$: Approx. 54 – 66Ω OK or NG : Approx. 54 – 66Ω	PKIA0820E

Combination Meter Circuit Check

1. CHECK CONNECTOR

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

: Approx. 108 – 132Ω

OK or NG

OK >> GO TO 2.

NG >> Repair terminal or connector.

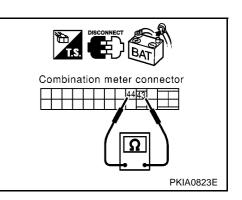
2. CHECK HARNESS FOR OPEN CIRCUIT

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

43(L) – 44(R)

OK or NG

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



CAN Communication Circuit Check

1. CHECK CONNECTOR

- 1. Turn ignition switch OFF.
- 2. Disconnect the negative battery terminal.
- 3. Check following terminals and connector for damage, 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.

EKS004Y0

CAN SYSTEM (TYPE 3)	[CAN]
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.	
 Check continuity between Data link connector M10 terminals 6 (L) and 3(R). 	
6(L) – 3(R) : Continuity should not exist.	Data link connector
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. 	PKIA0824E
 Repair harness between harness connector M89 and harness 	s connector M79.
3. CHECK HARNESS FOR SHORT CIRCUIT	
Check continuity between Data link connector M10 terminals 6 (L),	
3(R) and ground.	Bari
6(L) – ground : Continuity should not exist.	Data link connector
3(R) – ground : Continuity should not exist.	
OK or NG	
OK >> GO TO 4.	<u>_6, 3</u> _
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 entrar 	
 Repair harness between harness connector M89 and harness 	s connector M79.
4. CHECK HARNESS FOR SHORT CIRCUIT	
1. Disconnect harness connector B107.	
 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) 	Harness connector
1(L) – 8(G) (Sedan : Continuity should not exist.	
models)	
1(L) – 8(R) (Wagon models) : Continuity should not exist.	
OK or NG	PKIA0832E
OK >> GO TO 5.	

>> GO TO 5. ΟK

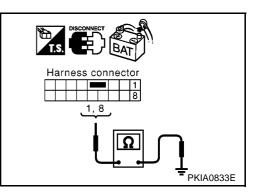
NG >> Repair harness between harness connector B102 and harness connector B107.

LAN-99

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.

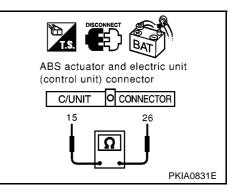
6. CHECK HARNESS FOR SHORT CIRCUIT

- 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.

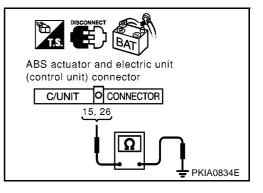
26(L) – ground : Continuity should not exist.

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

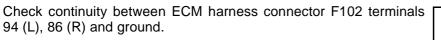
- 1. Disconnect ECM connector and TCM connector.
- 2. Check continuity between ECM harness connector F102 terminals 94 (L) and 86(R).
 - 94(L) 86(R)

: 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



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

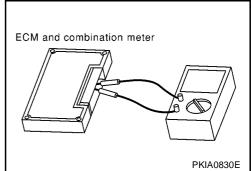
OK or NG

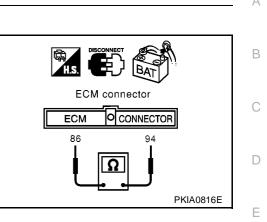
- OK >> Reconnect all connectors to perform "SELF-DIAG RESULTS" and "DATA MONITOR" for "ENGINE", "CVT", "ABS", "SMART ENTRANCE", and "AIR PRESSURE MONITOR" displayed on CONSULT-II. Refer to EC-1083, "DTC U1000, U1001 CAN COMMUNICATION LINE" (WITH EURO-OBD) or EC-1505, "DTC U1000, U1001 CAN COMMUNICATION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

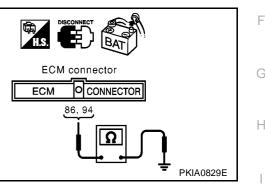
Component Inspection ECM / COMBINATION METER INTERNAL CIRCUIT INSPECTION

- 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	Applox. 100 - 132







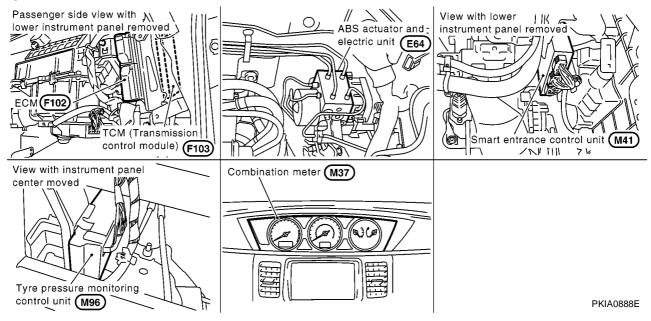
[CAN]

EKS004Y1

System Description

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

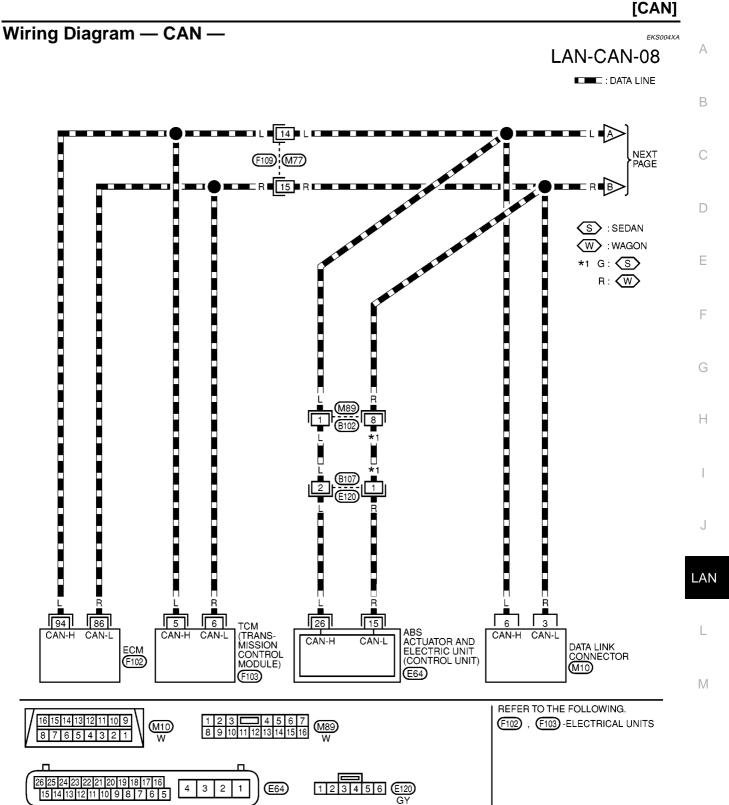
Component Parts and Harness Connector Location



[CAN]

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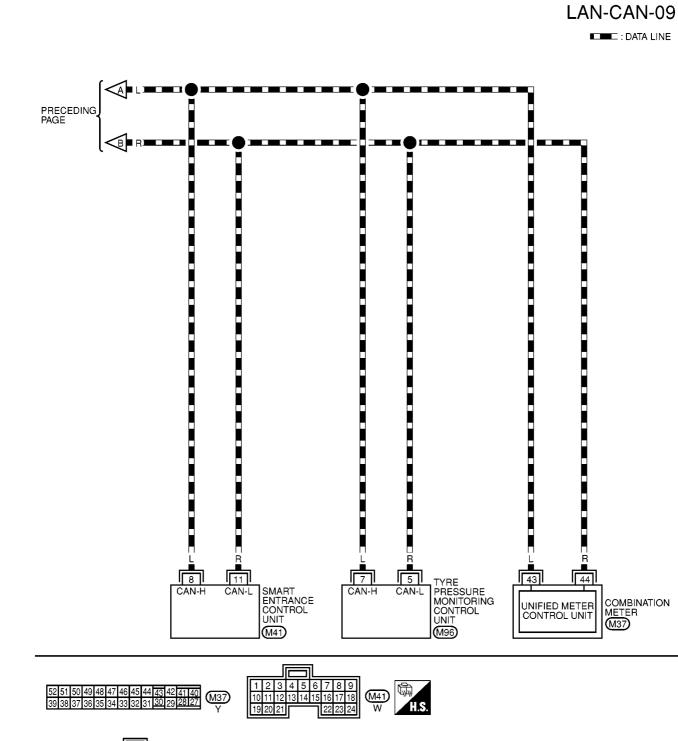
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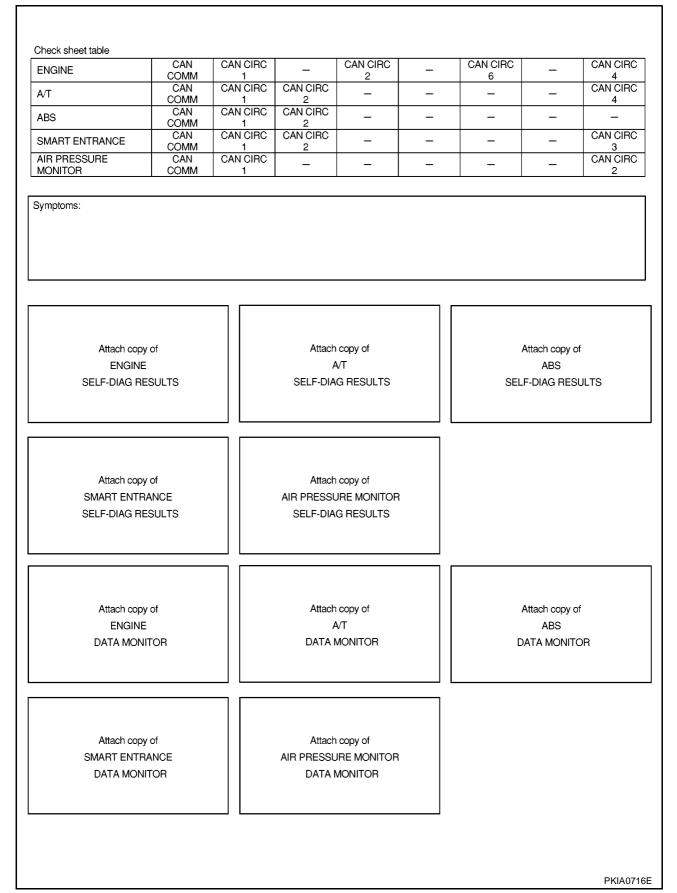
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Wc	ork Flow EKS004XB	
1.	Print all the data of "SELF-DIAG RESULTS" and "DATA MONITOR" for "ENGINE", "A/T", "ABS", "SMART ENTRANCE", and "AIR PRESSURE MONITOR" displayed on CONSULT-II. Refer to <u>EC-150, "DTC</u> U1000, U1001 CAN COMMUNICATION LINE" (WITH EURO-OBD) or <u>EC-663, "DTC U1000, U1001</u>	A
	<u>CAN COMMUNICATION LINE</u> " (WITHOUT EURO-OBD) for "ENGINE" and Refer to <u>AT-190, "DTC</u> <u>U1000 CAN COMMUNICATION LINE</u> " (EURO-OBD) or <u>AT-393, "CAN COMMUNICATION LINE</u> " (ALL)	В
	for "A/T". Refer to <u>BRC-33</u> , " <u>CAN Communication Circuit</u> " for "ABS". Refer to <u>BCS-40</u> , " <u>CAN Communication Line Check</u> " for "SMART ENTRANCE". Refer to <u>WT-35</u> , " <u>Inspection 4</u> : <u>CAN Communication Line</u> " for "AIR PRESSURE MONITOR".	С
2.	Attach the printed sheet of "SELF-DIAG RESULTS" and "DATA MONITOR" onto the check sheet. Refer to LAN-106, "CHECK SHEET"	D
3.	Based on the data monitor results, put "v" marks onto the items with "UNKWN" or "NG" in the check sheet table. Refer to <u>LAN-106</u> , "CHECK SHEET"	D
	NOTE: If "NG" is displayed on "CAN COMM" for the diagnosed control unit, replace the control unit.	Е
4.	According to the check sheet results (example), start inspection. Refer to <u>LAN-107</u> , <u>"CHECK SHEET</u> <u>RESULTS (EXAMPLE)"</u>	F
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CHECK SHEET



CHECK SHEET RESULTS (EXAMPLE)

ENGINE	CAN COMM	CAN CIRC	_	CAN CIRC	_	CAN CIRC	_	CAN CIRC
A/T	CAN	1 CAN CIRC	CAN CIRC	2	_	6	_	4 CAN CIRC
	COMM CAN	1 CAN CIRC	2 CAN CIRC					4
ABS	COMM	1	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	CAN CIRC	_		_	CAN CIRC	_	CAN CIRC
A/T	COMM CAN COMM	1 CAN CIRC 1	CAN CIRC	-	_		_	CAN CIRC
ABS	CAN COMM	CAN CIRC	CAN CIRC 2	-	_	-	_	-
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2	-	-	-	-	CAN CIRC 3
AIR PRESSURE	CAN	CAN CIRC	_	_	_	_		CAN CIRC
MONITOR		1				··	_	2
	 CAN	CAN CIRC						CAN CIRC
ase 2: Replace TCM	CAN	·				··		
ase 2: Replace TCM	CAN COMM CAM COMM	CAN CIRC 1 CAN CIRC 1 CAN CIRC 1	 CAN CIRC					CAN CIRC
ase 2: Replace TCM ENGINE A/T	CAN COMM CAM CAN CAN CAN CAN CAN	CAN CIRC 1 CAN CIRC 1 CAN CIRC	– CAN CIRC 2 CAN CIRC 2 CAN CIRC				_ 	CAN CIRC 4 CAN CIRC
ase 2: Replace TCM ENGINE A/T ABS	CAN COMM CAM COMM CAN COMM	CAN CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC	– CAN CIRC 2 CAN CIRC 2				 	CAN CIRC 4 CAN CIRC 4 - CAN CIRC
ase 2: Replace TCM ENGINE A/T ABS SMART ENTRANCE AIR PRESSURE	CAN COMM CAM CAN CAN CAN CAN COMM CAN COMM	CAN CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1	– CAN CIRC 2 CAN CIRC 2 CAN CIRC 2			CAN CIRC 6 	- - - - - -	CAN CIRC 4 CAN CIRC 4 CAN CIRC 3 CAN CIRC 2
ase 2: Replace TCM ENGINE A/T ABS SMART ENTRANCE AIR PRESSURE	CAN COMM COMM CAN COMM CAN COMM CAN	CAN CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1	- CAN CIRC 2 CAN CIRC 2 CAN CIRC 2 -	CAN C/RC 		CAN CIRC 6 – –		CAN CIRC 4 CAN CIRC 4 CAN CIRC 3 CAN CIRC 2 CAN CIRC 4
ase 2: Replace TCM ENGINE A/T ABS SMART ENTRANCE AIR PRESSURE MONITOR	CAN COMM COMM CAN COMM CAN COMM CAN COMM CAN	CAN CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC	– CAN CIRC 2 CAN CIRC 2 CAN CIRC 2	CAN CIRC		CAN CIRC 6 CAN CIRC	- - - - - - - - - - -	CAN CIRC 4 CAN CIRC 4 CAN CIRC 3 CAN CIRC 2 CAN CIRC 4
ase 2: Replace TCM ENGINE A/T ABS SMART ENTRANCE AIR PRESSURE MONITOR ENGINE	CAN COMM CAM CAN COMM CAN CAN COMM CAN COMM CAN COMM	CAN CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC	- CAN CIRC 2 CAN CIRC 2 CAN CIRC 2 -	CAN CIRC - - - CAN CIRC 2		CAN CIRC 6 		CAN CIRC 4 CAN CIRC 4 CAN CIRC 3 CAN CIRC 2 CAN CIRC
ase 2: Replace TCM ENGINE A/T ABS SMART ENTRANCE AIR PRESSURE MONITOR ENGINE A/T	CAN COMM CAM CAN CAN CAN CAN COMM CAN COMM CAN CAN CAN CAN CAN	CAN CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC	CAN CIRC 2 CAN CIRC 2 CAN CIRC 2 CAN CIRC CAN CIRC CAN CIRC	CAN CIRC - - - CAN CIRC 2		CAN CIRC 6 	- - - - - - - - - - - - - - - - - - -	CAN CIRC 4 CAN CIRC 4 CAN CIRC 3 CAN CIRC 2 CAN CIRC 4

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ENGINE	CAN COMM	CAN CIRC	_	CAN CIRC 2	_	CAN CIRC 6	_	CAN CIRC
A/T	CAN	CAN CIRC	CAN CIRC 2	-	_	-	_	CAN CIRC
ABS	CAN	CAN CIRC 1	CAN CIRC 2	_	_	-	_	_
SMART ENTRANCE	CAN COMM	CAN CIRC	CAN CIRC 2	_	_	-	_	CAN CIRC 3
AIR PRESSURE MONITOR	CAN COMM	CAN CIRC 1	_	-	-	-	—	CAN CIRC 2
ENGINE	CAN COMM	CAN CIRC	_	CAN CIRC 2	_	CAN CIRC 6	_	CAN CIRC
A/T	CAN COMM	CAN CIRC	CAN CIRC 2	_	-	-	-	CAN CIRC
ABS	CAN COMM	CAN CIRC	CANORC	_	_	-	_	_
SMART ENTRANCE	CAN COMM	CAN CIRC	CAN CIRC 2	_	_	-	_	CAN CIRC 3
AIR PRESSURE MONITOR	CAN COMM	CAN CIRC	_	_	_	_	_	CAN CIRC 2
А/Т	COMM CAN	CAN CIRC	CAN CIRC	2	_	6	_	CAN CIRC
ABS	COMM CAN	1 CAN CIRC	2 CAN CIRC	_	_	_	_	4
SMART ENTRANCE	COMM CAN	1 CAN CIRC	2 CAN CIRC	_	_			CAN CIRC
AIR PRESSURE	COMM CAN	1 CAN CIRC	2	_				CAN CIRC
MONITOR	COMM	1						2
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 4
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	_	-	-	-	_
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CANORC	_	-	-	-	
	CAN COMM	CAN CIRC 1	-	-	-	-	-	CAN CIRC 2
AIR PRESSURE MONITOR								

PKIA0718E

Case 5: Replace	e 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	CAN CIRC 2	-	-	-	-	CAN CIRC 4
ABS	CAN COMM	CAN CIRC	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

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ENGINE	CAN COMM	CAN CIRC	-	CAN CIRC 2	-		_	CANCIRC
A/T	CAN COMM	CAN CIRC 1	CAN CIRC 2	-	-	-	_	CANORC
ABS	CAN COMM	CAN CIRC		_	_	_	_	_
SMART ENTRANCE	CAN COMM	CAN CIRC		-	_	_	_	CAN CIRC 3
AIR PRESSURE MONITOR	CAN COMM	CAN CIRC	_	_	_	—	_	CAN CIRC 2

Case 7								
ENGINE	CAN COMM	CAN CIRC 1	-	CAN CIRC 2	-	CANORC	-	CANORC
A/T	CAN COMM	CAN CIRC 1	CAN CIRC 2	-	_	-	-	CANORC
400	CAN	CAN CIRC	CAN CIRC					

		1 1	2					•
ABS	CAN	CAN CIRC	CAN CIRC	_	_	_	_	_
AB3	COMM	1	2			_	_	_
SMART ENTRANCE	CAN	CAN CIRC	CAN ORC	_	_	_	_	CAN CIRC
SMART ENTRANCE	COMM	1	V V			_	_	3
AIR PRESSURE	CAN	CAN CIRC	_	_	_	_	_	CAN CIRC
MONITOR	COMM	1	_			_	_	2

Case 8

ENGINE	CAN COMM	CAN CIRC	_	CAN CIRC	_	CAN CIRC	_	CANORC
A/T	CAN COMM	CAN CIRC	CAN CIRC	_	_	_	-	
ABS	CAN	CAN CIRC	CAN CIRC 2	_	_	_	_	_
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2	-	-	_	_	CANCIRC
AIR PRESSURE MONITOR	CAN COMM	CAN CIRC 1	_	-	-	_	_	CAN CIRC 2

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	CAN COMM	CANCIRC	_	CANORC	_	CANCARC	_	CANCIRC
A/T	CAN COMM	CAN CIRC	CANCIRC	-	_	-	_	CAN CIRC 4
ABS	CAN COMM	CAN CIRC	CANORC	_	_	_	_	
SMART ENTRANCE	CAN COMM	CAN CIRC	CANORC	_	_		-	CAN CIRC 3
AIR PRESSURE MONITOR	CAN COMM	1 CAN CIRC 1	_	-	-	-	-	CAN CIRC 2
ase 10 ENGINE	CAN COMM	CAN CIRC	_	CANORC	_	CAN CIRC 6	_	CAN CIRC
A/T	CAN	CANORC	CANCIRC	-	_	-	_	
ABS	CAN	CAN CIRC	CAN CIRC 2	_	_		_	-
SMART ENTRANCE	CAN	CAN CIRC	CAN CIRC	_	_		_	CAN CIRC 3
AIR PRESSURE MONITOR	CAN	CAN CIRC	_	_	_	_	_	CAN CIRC 2
ase 11 ENGINE	CAN COMM CAN	CAN CIRC 1 CAN CIRC	– CAN CIRC	CAN CIRC 2	_	CAN CIRC 6	_	CAN CIRC 4 CAN CIRC
ENGINE	COMM	1	-		-		-	4
A/T	COMM CAN	1	2	-	_	-	-	4
ABS	COMM			-	-	-	-	
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	-	CAN CIRC 2	_	CANORC	_	CAN CIRC 4
A/T	CAN COMM	CAN CIRC	CAN CIRC 2	_	-	-	-	CAN CIRC 4
ABS	CAN COMM	CAN CIRC	CAN CIRC 2	-	-	-	-	-
	CAN COMM	CANORC	CANCARC	-	_		_	
SMART ENTRANCE	CAN	CAN CIRC	-					CAN CIRC

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	CAN COMM	CAN CIRC	_	CAN CIRC 2	_	CAN CIRC 6	_	CAN CIRC
A/T	CAN	CAN CIRC	CAN CIRC 2	_	_	-	_	CAN CIRC
ABS	CAN COMM	CAN CIRC	CAN CIRC 2	_	_	-	_	
SMART ENTRANCE	CAN COMM	CAN CIRC	CAN CIRC 2	-	_	-	_	CAN CIRC 3
AIR PRESSURE MONITOR	CAN COMM	CANORC	-	_	-	-	_	CANORC
ase 14	CAN	CAN CIRC		CAN CIRC		CAN CIRC		
ENGINE	COMM	1	_	2	-		-	V
A/T	CAN COMM	CAN CIRC 1	CAN CIRC 2	-	_	-	_	CANORC
ABS	CAN COMM	CAN CIRC	CAN CIRC 2	-	-	-	-	-
SMART ENTRANCE	CAN COMM	CAN CIRC	CAN CIRC 2	-	_	-	_	CANORC
AIR PRESSURE MONITOR	CAN COMM	CAN CIRC 1	_	-	-	-	-	CANORC
ase 15 ENGINE	CAN COMM	CANCIRC	_	CANORC	_	CAN CIRC	_	CANORC
				.				
A/T	CAN	CANCIEC	CAN C/RC	-	_	-	—	CANORC
A/T ABS	CAN COMM CAN	CAN CIRC CAN CIRC	CAN ORC	-	_	-	_	
	CAN COMM	V	-			- - -		CAN ORC – CAN ORC

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 <u>LAN-112, "Circuit Check Between</u> <u>TCM and Data Link Connector"</u>

Case 7:Check Harness between Data link connector and Smart entrance control unit. Refer to <u>LAN-113, "Circuit Check Between Data Link Connector and Smart Entrance Control Unit"</u>

LAN-111

[CAN]

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 <u>LAN-115</u>, "ABS Actuator and <u>Electric Unit (control unit) Circuit Check</u>"

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 <u>LAN-116</u>, "Tyre Pressure Monitoring <u>Control Unit Circuit Check"</u>

Case 14:Check Combination meter Circuit. Refer to <u>LAN-117, "Combination Meter Circuit Check"</u> Case 15:Check CAN communication Circuit. Refer to <u>LAN-117, "CAN Communication Circuit Check"</u>

Circuit Check Between TCM and Data Link Connector

1. CHECK CONNECTOR

EKS004XC

- 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.

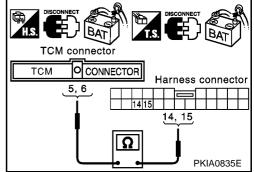
2. CHECK HARNESS FOR OPEN CIRCUIT

- 1. Disconnect TCM connector and harness connector F109.
- 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)
 - 6(R) 15(R)
- : Continuity should exist.

: Continuity should exist.

OK or NG

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



3. CHECK HARNESS FOR OPEN CIRCUIT

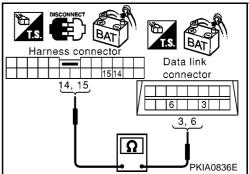
Check continuity between harness connector M77 terminals 14 (L), 15 (R) and Data link connector M10 terminals 6 (L), 3 (R).

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

: Continuity should exist.



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 <u>EC-150,</u> "DTC U1000, U1001 CAN COMMUNICATION LINE" (WITH EURO-OBD) or <u>EC-663, "DTC U1000, U</u>1001



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

LAN-112

[CAN] 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: А CAN Communication Line" for "AIR PRESSURE MONITOR". NG >> Repair harness. Circuit Check Between Data Link Connector and Smart Entrance Control Unit B EKS004XD 1. CHECK CONNECTOR 1. Turn ignition switch OFF. 2. Disconnect the negative battery terminal. Check following terminals and connector for damage, bend and loose connection. (control unit-side and 3. D harness-side) Smart entrance control unit. ABS actuator and electric unit (control unit). E Between smart entrance control unit and ABS actuator and electric unit (control unit). OK or NG F 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 Н connector M41 terminals 8 (L), 11 (R) and Data link connector M10 terminals 6 (L), 3 (R). Smart entrance control 8(L) - 6(L): Continuity should exist. Data link connector unit connector 11(R) - 3(R): Continuity should exist.

OK or NG

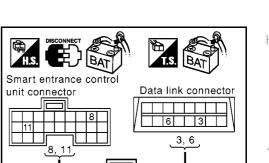
OK >> Reconnect all connectors to perform "SELF-DIAG '8, 11' RESULTS" and "DATA MONITOR" for "ENGINE", "A/T", Ω "ABS", "SMART ENTRANCE", and "AIR PRESSURE MONITOR" displayed on CONSULT-II. Refer to EC-150, PKIA0813E LAN "DTC U1000, U1001 CAN COMMUNICATION LINE" (WITH EURO-OBD) or EC-663, "DTC U1000, U1001 CAN COMMUNICATION LINE" (WITHOUT EURO-OBD) for "ENGINE" and Refer to AT-190, "DTC U1000 CAN COMMUNICATION LINE" (EURO-OBD) or <u>AT-393, "CAN COMMUNICATION LINE"</u> (ALL) for "A/T". Refer to <u>BRC-33, "CAN</u> <u>Communication Circuit"</u> for "ABS". Refer to <u>BCS-40, "CAN Communication Line Check"</u> for L "SMART ENTRANCE". Refer to WT-35, "Inspection 4: CAN Communication Line" for "AIR PRES-SURE MONITOR". Μ NG >> Repair harness.

Circuit Check Between Smart Entrance Control Unit and Tyre Pressure Monitoring Control Unit FKS004XF

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

OK or NG

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



EKS004XF

2. CHECK HARNESS FOR OPEN CIRCUIT

- 1. Disconnect smart entrance control unit connector and tyre pressure monitoring control unit connector.
- Check continuity between smart entrance control unit harness 2. 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)

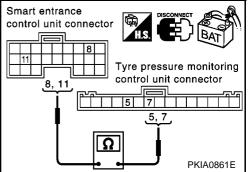
: Continuity should exist.

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 <u>AT-393, "CAN COMMUNICATION LINE"</u> (ALL) for "A/T". Refer to <u>BRC-33, "CAN</u> <u>Communication Circuit"</u> for "ABS". Refer to <u>BCS-40, "CAN Communication Line Check"</u> for "SMART ENTRANCE". Refer to WT-35, "Inspection 4: CAN Communication Line" for "AIR PRES-SURE MONITOR".

NG >> Repair harness.

ECM Circuit Check

1. CHECK CONNECTOR

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

OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

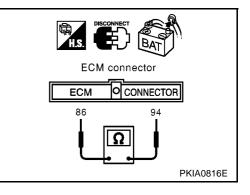
- 1. Disconnect ECM connector.
- Check resistance between ECM harness connector F102 termi-2. nals 94(L) and 86(R).

94(L) - 86(R)

: Approx. 108 – 132 Ω

OK or NG

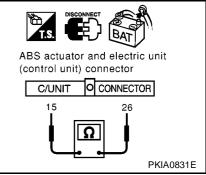
- OK >> Replace ECM.
- NG >> Repair harness between TCM and ECM.



CAN STSTEW (TIPE 4)	
	[CAN]
TCM Circuit Check 1. CHECK CONNECTOR	EKS004XG
 Turn ignition switch OFF. Disconnect the negative battery terminal. Check terminals and connector of TCM for damage, bend and loos harness-side) <u>OK or NG</u> OK >> GO TO 2. NG >> Repair terminal or connector. 	e connection. (control module-side and
2. CHECK HARNESS FOR OPEN CIRCUIT	
 Disconnect TCM connector. 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 1. CHECK CONNECTOR 1. Turn ignition switch OFF.	t Check EKS004XH
2. Disconnect the negative battery terminal.	
 B. Check following terminals and connector for damage, bend and lo harness-side) ABS actuator and electric unit (control unit). 	oose connection. (control unit-side and
 Harness connector E120. Harness connector B107. Harness connector B102. 	
 Harness connector M89. <u>OK or NG</u> OK >> GO TO 2. 	
NG >> Repair terminal or connector. 2. CHECK HARNESS FOR OPEN CIRCUIT	
 Disconnect ABS actuator and electric unit (control unit) connector. 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 	
	ABS actuator and electric unit

OK or NG

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



Ν

Smart Entrance Control Unit Circuit Check

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

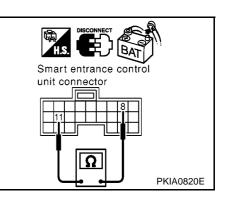
- 1. Disconnect smart entrance control unit connector.
- 2. Check resistance between smart entrance control unit harness connector M41 terminals 8(L) and 11(R).

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

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.

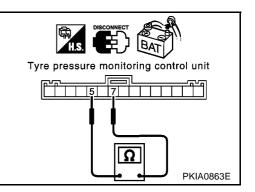
2. CHECK HARNESS FOR OPEN CIRCUIT

- 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).

: 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.



EKS004XJ

[CAN]

	, [CAN]
Combination Meter Circuit Check 1. CHECK CONNECTOR	EKS004XK
 Turn ignition switch OFF. Disconnect the negative battery terminal. Check terminals and connector of combination meter for damage, and harness-side) OK or NG OK or NG OK >> GO TO 2. NG >> Repair terminal or connector. CHECK HARNESS FOR OPEN CIRCUIT 	bend and loose connection.(meter-side
Disconnect combination meter connector.	
 Disconnect combination meter connector. Check resistance between combination meter harness connector M37 terminals 43(L) and 44(R). 43(L) - 44(R) : Approx. 108 - 132Ω 	T.S. DISCONNECT
OK or NG OK >> Replace combination meter. NG >> Repair harness between tyre pressure monitoring control unit and combination meter.	Combination meter connector
CAN Communication Circuit Check	EKS004XL
 Turn ignition switch OFF. Disconnect the negative battery terminal. Check following terminals and connector for damage, bend and unit-side, control module-side and harness-side) Combination meter. 	loose connection. (meter-side, control

Μ

- Combination meter.
- Tyre pressure monitoring control unit. •
- Smart entrance control unit. •
- ABS actuator and electric unit (control unit). •
- TCM. •
- ECM. ٠
- Between ABS actuator and electric unit (control unit) and ECM. •

OK or NG

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

- 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.
- 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.

: Continuity should not exist.

OK or NG

OK >> GO TO 4. NG >> • Repair

3(R) – ground

- > 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

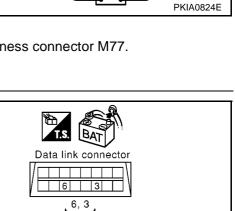
- 1. Disconnect harness connector B107.
- 2. Check the following.
- Continuity between harness connector B102 terminals 1 (L) and 8(G).(Sedan models)
- Continuity between harness connector B102 terminals 1 (L) and 8(R).(Wagon models)

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

OK or NG

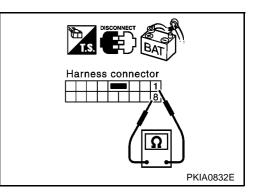
OK >> GO TO 5.

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



PKIA0825E

Data link connector

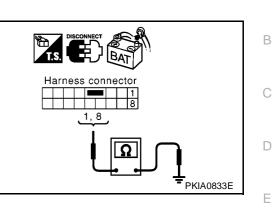


LAN-118

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.

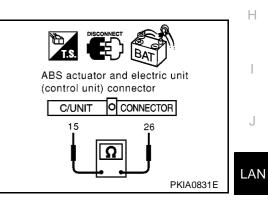
6. CHECK HARNESS FOR SHORT CIRCUIT

- 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.

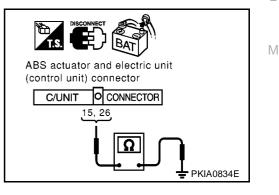
15(R) – ground

: Continuity should not exist.

OK or NG

OK	>> GO TO 8.
	// 00 10 0.

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



А

F

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.
- >> Repair harness between ECM and harness connector NG 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
- 86(R) ground
- : Continuity should not exist.
- : 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"

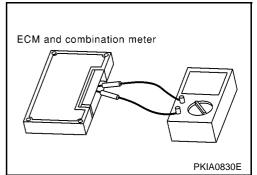
OK or NG

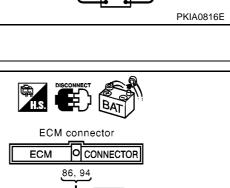
- OK >> Reconnect all connectors to perform "SELF-DIAG RESULTS" and "DATA MONITOR" for "ENGINE", "A/T", "ABS", "SMART ENTRANCE", and "AIR PRESSURE MONITOR" displayed on CONSULT-II. Refer to EC-150, "DTC U1000, U1001 CAN COMMUNICATION LINE" (WITH EURO-OBD) or EC-663, "DTC U1000, U1001 CAN COMMUNICATION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

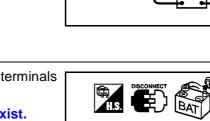
Component Inspection ECM / COMBINATION METER INTERNAL CIRCUIT INSPECTION

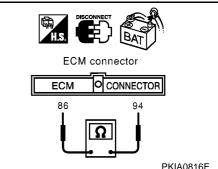
- Remove ECM and Combination meter from vehicle.
- Check resistance between ECM terminals 94 and 86.
- Check resistance between Combination meter terminals 43 and 44.

Unit	Terminal	Resistance value (Ω)
ECM	94 - 86	Approx. 108 - 132
Combination meter	43 – 44	Applox. 100 - 132









LAN-120

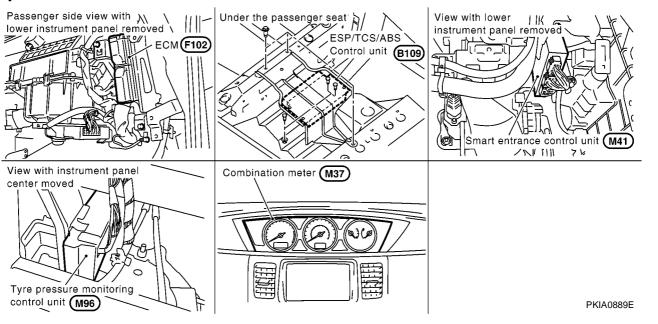
EKS004XM

PKIA0829E

System Description

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

Component Parts and Harness Connector Location



LAN

L

Μ

PFP:23710

EKS004WU

EKS004WV

А

В

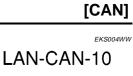
D

Ε

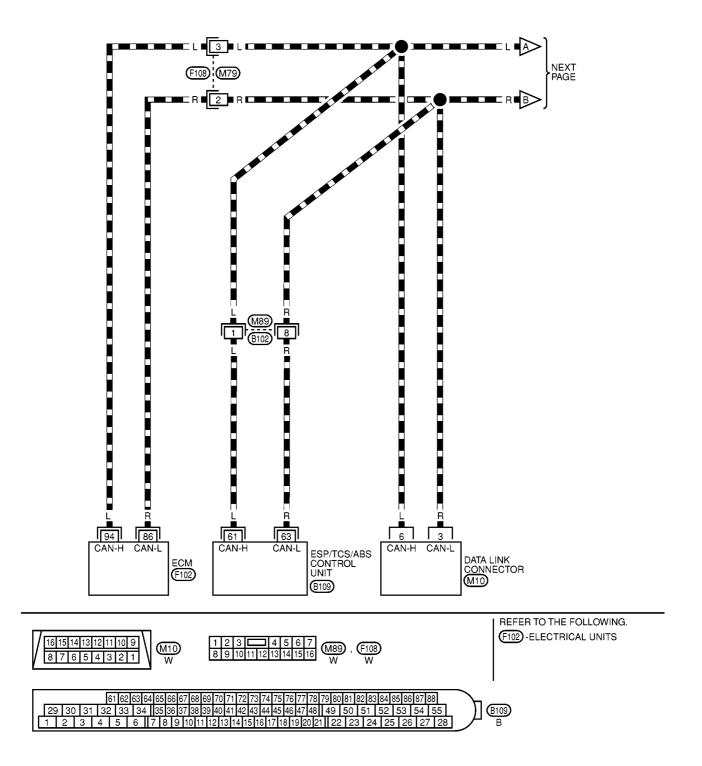
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Н

Wiring Diagram — CAN —

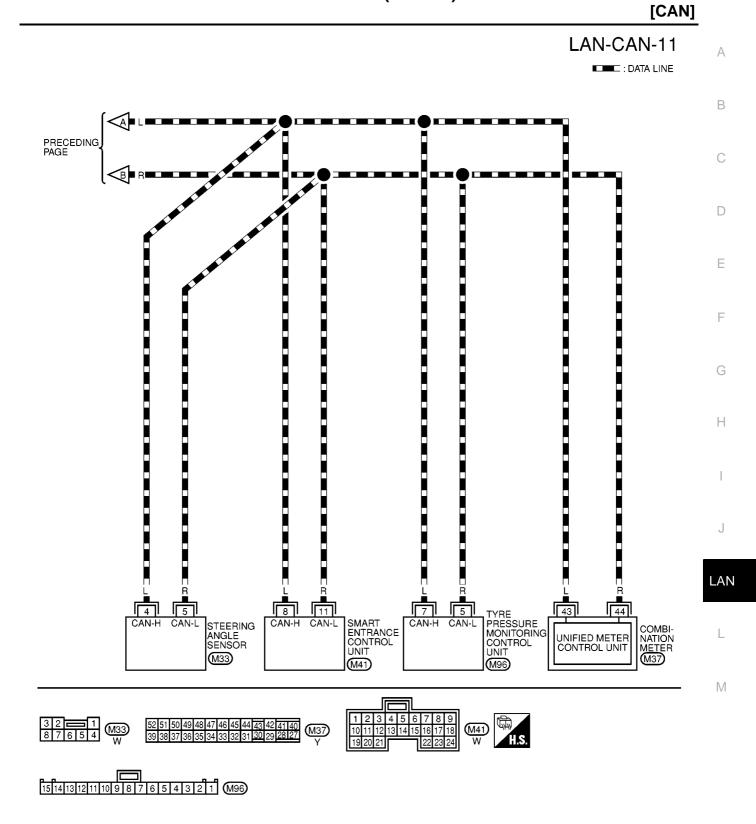


DATA LINE



MKWA0233E





MKWA0234E

Work Flow

EKS004WX

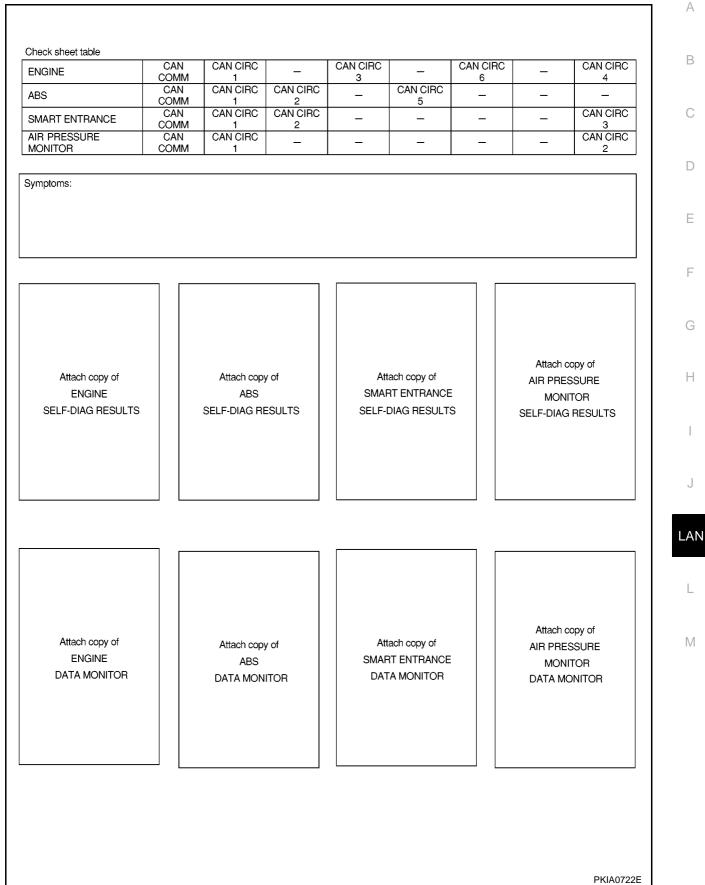
- Print all the data of "SELF-DIAG RESULTS" and "DATA MONITOR" for "ENGINE", "ABS", "SMART ENTRANCE", and "AIR PRESSURE MONITOR" displayed on CONSULT-II. Refer to <u>EC-1083</u>, "<u>DTC</u> <u>U1000, U1001 CAN COMMUNICATION LINE"</u> (WITH EURO-OBD) or <u>EC-1505</u>, "<u>DTC U1000, U1001</u> <u>CAN COMMUNICATION LINE"</u> (WITHOUT EURO-OBD) for "ENGINE" and Refer to <u>BRC-107</u>, "Inspection 15 CAN Communication Circuit, ESP/TCS/ABS Control Unit and Steering Angle Sensor" for "ABS". Refer to <u>BCS-40</u>, "CAN Communication Line Check" for "SMART ENTRANCE". Refer to <u>WT-35</u>, "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"
- Based on the data monitor results, put "v" marks onto the items with "UNKWN" or "NG" in the check sheet table. Refer to <u>LAN-125, "CHECK SHEET"</u>

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 <u>LAN-126, "CHECK SHEET</u> <u>RESULTS (EXAMPLE)"</u>

CHECK SHEET



CHECK SHEET RESULTS (EXAMPLE)

ENGINE	CAN	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	_		_		_	CANORO
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	CAN CIRC	_	_	_	_	_	CAN CIRC
		1						2
ase 2: Replace ESP/TCS/	ABS control unit	· - · - · - · - · - · - · - · - · - · -	··	<u> </u>				
	ABS control unit	CAN CIRC		CANORC		CAN CIRC 6		CAN CIRC
ase 2: Replace ESP/TCS/	ABS control unit CAN COMM CAN CAN	CAN CIRC 1 CAN CIRC 1	– CAN CIRC 2	CAN ORC	– CAN CIRC 5			CAN CIRC 4 –
ase 2: Replace ESP/TCS/ ENGINE	ABS control unit	CAN CIRC 1 CAN CIRC 1 CAN CIRC 1						CAN CIRC 4 CAN CIRC 3
ase 2: Replace ESP/TCS/ ENGINE ABS	ABS control unit CAN COMM CAN COMM CAN	CAN CIRC 1 CAN CIRC 1 CAN CIRC	2 CAN CIRC	CAN O'RC - - -				CAN CIRC 4 – CAN CIRC
ase 2: Replace ESP/TCS/ ENGINE ABS SMART ENTRANCE AIR PRESSURE	ABS control unit CAN COMM CAN CAM CAN CAN CAN	CAN CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1	2 CAN CIRC 2 —	CAN ORC - - - CAN CIRC 3	5 			CAN CIRC 4 CAN CIRC 3 CAN CIRC
ase 2: Replace ESP/TCS/ ENGINE ABS SMART ENTRANCE AIR PRESSURE MONITOR ENGINE	ABS control unit CAN COMM CAN CAM CAN CAN CAN CAN CAN CAN	CAN CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC	2 CAN CIRC 2 - CAN CIRC	– – – CAN CIRC		6 CAN CIRC		CAN CIRC 4 CAN CIRC 3 CAN CIRC 2 CAN CIRC
ase 2: Replace ESP/TCS/ ENGINE ABS SMART ENTRANCE AIR PRESSURE MONITOR	ABS control unit CAN COMM CAN COMM CAN COMM CAN COMM CAN COMM	CAN CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC	2 CAN CIRC 2 —	– – – CAN CIRC	5 	6 CAN CIRC		CAN CIRC 4 CAN CIRC 3 CAN CIRC 2 CAN CIRC

PKIA0723E

[CAN]

ENGINE	CAN COMM	t CAN CIRC 1	_	CAN CIRC	_	CAN CIRC	_	
BS	CONNIN CAN COMM	CAN CIRC	CAN CIRC	3	CAN CIRC 5	6	_	4
MART ENTRANCE	CAN COMM	CAN CIRC	CAN CIRC 2	_	_	_	_	CAN CIRC 3
R PRESSURE ONITOR	CAN COMM	CAN CIRC 1	_	-	_	-	_	CAN CIRC 2
NGINE	CAN COMM	CAN CIRC	_	CAN CIRC	_	CAN CIRC	_	
BS	CAN COMM	CAN CIRC	CAN CIRC	3	CAN CIRC 5	6 —	_	4
MART ENTRANCE	CAN COMM	CAN CIRC		_	_	_	_	CAN C/RC
IR PRESSURE IONITOR	CAN COMM	CAN CIRC	-	_	_	_	_	CAN CIRC 2
	1			•				.
se 4: Replace Tyre pres	sure monitoring	control unit						
ENGINE	CAN COMM	CAN CIRC	-	CAN CIRC 3	_	CAN CIRC 6	_	CAN CIRC 4
NBS	CAN COMM	CAN CIRC 1	CAN CIRC 2	-	CAN CIRC 5	_	_	_
MART ENTRANCE	CAN COMM	CAN CIRC	CAN CIRC 2	-	_	_	_	CAN CIRC 3
								CAN CIRC
		CAN CIRC				_	_	2
10NITOR 	CAN	1 		CAN CIRC			_ 	
ONITOR 	CAN COMM CAN	1 CAN CIRC 1 CAN CIRC	– CAN CIRC	l 			_ 	2
IONITOR Se 5 INGINE BS	CAN COMM CAN COMM CAN	1 CAN CIRC 1 CAN CIRC 1 CAN CIRC	– CAN CIRC 2	CAN CIRC			_ 	CAN ORC CAN ORC CAN CIRC
ONITOR e 5 NGINE BS MART ENTRANCE IR PRESSURE	CAN COMM CAN COMM CAN COMM CAN	1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC	– CAN CIRC	CAN CIRC 3 -				CAN CRC CAN CRC CAN CIRC 3 CAN CIRC
IONITOR Se 5 SINGINE IBS SMART ENTRANCE IR PRESSURE	CAN COMM CAN COMM CAN COMM	1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1	CAN CIRC 2 CAN CIRC	CAN CIRC 3 –		CAN ORC		CAN CRC CAN CRC CAN CIRC 3
IR PRESSURE MONITOR se 5 ENGINE MART ENTRANCE IR PRESSURE MONITOR se 6	CAN COMM CAN CAN COMM CAN CAN COMM	1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1	CAN CIRC 2 CAN CIRC	CAN CIRC 3 - - -		CAN ORC - -		CAN ORC CAN ORC CAN CIRC 3 CAN CIRC 2
IONITOR See 5 NGINE BS MART ENTRANCE IR PRESSURE IONITOR See 6 NGINE	CAN COMM CAN COMM CAN COMM CAN COMM	1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1	CAN CIRC 2 CAN O'RC -	CAN CIRC 3 –		CAN ORC		CAN CRC CAN CRC CAN CIRC 3 CAN CIRC
IONITOR Se 5 NGINE BS MART ENTRANCE IR PRESSURE IONITOR Se 6 NGINE BS	CAN COMM CAN COMM CAN COMM CAN COMM CAN COMM	1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1	- CAN CIRC 2 CAN ORC - CAN CIRC 2	CAN CIRC 3 - - - - CAN CIRC		CAN ORC - - - CAN CIRC		2 CAN CRC CAN CRC 3 CAN CIRC 2 CAN CRC
ONITOR	CAN COMM CAN COMM CAN COMM CAN COMM CAN	1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC	CAN CIRC 2 CAN O'RC - - CAN CIRC	CAN CIRC 3 - - - - CAN CIRC		CAN ORC - - - CAN CIRC		CAN ORC CAN ORC CAN CIRC 3 CAN CIRC 2

PKIA0724E

[CAN]

ENGINE	CAN COMM	CANCIRC	-	CANORC	_	CANCIRC	_	
ABS	CAN COMM	CAN CIRC	CANORC	_	CAN CIRC 5	-	_	-
SMART ENTRANCE	CAN COMM	CAN CIRC	CANORC	_	_	_	_	CAN CIRC
AIR PRESSURE MONITOR	CAN COMM	CAN CIRC 1	_	_	_	_	_	CAN CIRC 2
ase 8								
ENGINE	CAN COMM	CAN CIRC	-	CANORC	-	CAN CIRC 6	-	CAN CIRC 4
ABS	CAN COMM	CANORC		-		_	_	_
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2	_	_	-	-	CAN CIRC 3
AIR PRESSURE MONITOR	CAN COMM	CAN CIRC 1	_	-	-	—	_	CAN CIRC 2
ase 9			I					
ENGINE	CAN COMM	CAN CIRC 1	_	CAN CIRC 3	_	CAN CIRC 6	-	CAN CIRC 4
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	_		_	_	-
SMART ENTRANCE	CAN COMM	CAN CIRC	CAN CIRC 2	-	_	-	-	CAN CIRC 3
AIR PRESSURE MONITOR	CAN COMM	CAN CIRC	_	_	_	_	_	CAN CIRC 2
		•		•				
ase 10 ENGINE	CAN COMM	CAN CIRC		CAN CIRC				
	COMM CAN	1 CAN CIRC	– CAN CIRC	CAN CIRC 3 –	CAN CIRC			CAN CIRC 4
ENGINE	COMM CAN COMM CAN	1	CAN CIRC 2 CAN CIRC		– CAN CIRC 5			4
ENGINE ABS SMART ENTRANCE AIR PRESSURE	COMM CAN COMM CAN COMM CAN	1 CAN CIRC 1 CAN ORC CAN CIRC	2			CAN ORC - -		CAN CIRC
ENGINE ABS SMART ENTRANCE	COMM CAN COMM CAN COMM	1 CAN CIRC 1 CAN O'RC	2			CAN CARC 		4 – CAN C/RC
ENGINE ABS SMART ENTRANCE AIR PRESSURE MONITOR	COMM CAN COMM CAN COMM CAN	1 CAN CIRC 1 CAN ORC CAN CIRC	2			CAN CARC - -		4 CAN CIRC CAN CIRC
ENGINE ABS SMART ENTRANCE AIR PRESSURE	COMM CAN COMM CAN COMM CAN COMM	1 CAN CIRC 1 CAN CIRC 1 CAN CIRC	2	3 			- - - - -	4 CAN ORC CAN CIRC 2 CAN CIRC
ENGINE ABS SMART ENTRANCE AIR PRESSURE MONITOR	COMM CAN COMM CAN COMM CAN COMM CAN CAN	1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC	2 CAN O'RC –	3	5 — — — — — — —	- - -		4 CAN ORC CAN CIRC 2
ENGINE ABS SMART ENTRANCE AIR PRESSURE MONITOR ase 11 ENGINE	COMM CAN COMM CAN COMM CAN COMM CAN CAN CAN	1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC	2 CAN O'RC – CAN CIRC 2 CAN CIRC 2 CAN CIRC	3 	5 			4 CAN CIRC CAN CIRC 2 CAN CIRC 4 CAN CIRC
ENGINE ABS SMART ENTRANCE AIR PRESSURE MONITOR ase 11 ENGINE ABS	COMM CAN COMM CAN COMM CAN COMM CAN CAN CAN CAN	1 CAN CIRC 1 CAN OTRC CAN CIRC 1 CAN CIRC 1 CAN CIRC 1	2 CAN O'RC – CAN CIRC 2	3 	5 — — — — — — —		- - - - - - - - - - - - - - -	4 CAN ORC CAN CIRC 2 CAN CIRC

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[CAN]

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Case 12								
ENGINE	CAN COMM	CAN CIRC 1	_	CAN CIRC 3	_	CAN CIRC 6	_	CANORC
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	-	CAN CIRC 5	-	-	-
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2	_	_	_	_	CANORC
AIR PRESSURE MONITOR	CAN COMM	CAN CIRC 1	-	-	-	_	_	CANORC

C

ENGINE	CAN COMM		_		_		-	CANORC
ABS	CAN COMM	CANORC		-		-	_	-
SMART ENTRANCE	CAN COMM	CANORC		-	_	-	_	CANORC
AIR PRESSURE MONITOR	CAN COMM	CANORC	_	_	_	_	_	CANORC

Н

E

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"

Μ 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"

LAN-129

LAN

[CAN]

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.
- Check following terminals and connector for damage, bend and loose connection. (control unit-side, sen-3. sor-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)

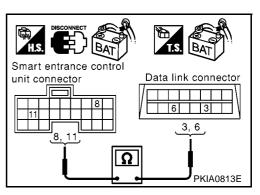
: Continuity should exist.

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 Monitorina Control Unit EKS004WZ

1. CHECK CONNECTOR

- Turn ignition switch OFF. 1.
- 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 А 1. Disconnect smart entrance control unit connector and tyre pressure monitoring control unit connector. 2. Check continuity between smart entrance control unit harness Smart entrance В connector M41 terminals 8 (L), 11 (R) and tyre pressure monitorcontrol unit connector ing control unit harness connector M96 terminals 7 (L), 5 (R). 8 8(L) - 7(L): Continuity should exist. Tyre pressure monitoring الل 11(R) - 5(R): Continuity should exist. control unit connector ີ <u>8,</u> 11 OK or NG 5 7 ູ5, 7 OK >> Reconnect all connectors to perform "SELF-DIAG RESULTS" and "DATA MONITOR" for "ENGINE". Ω "ABS", "SMART ENTRANCE", and "AIR PRESSURE PKIA0861E MONITOR" displayed on CONSULT-II. Refer to EC-E 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, F "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 Н 1. Turn ignition switch OFF. Disconnect the negative battery terminal. 2. 3. Check following terminals and connector for damage, bend and loose connection. (control module-side I and harness-side) ECM. Harness connector F108. Harness connector M79. OK or NG LAN OK >> GO TO 2. NG >> Repair terminal or connector. 2. CHECK HARNESS FOR OPEN CIRCUIT Disconnect ECM connector. 1. Check resistance between ECM harness connector F102 termi-2. Μ nals 94(L) and 86(R). 94(L) - 86(R): Approx. 108 – 132 Ω ECM connector OK or NG OK ECM O CONNECTOR >> Replace ECM. NG >> Repair harness between Data link connector and ECM. 86 94 **PKIA0816E**

ESP/TCS/ABS Control Unit Circuit Check

1. CHECK CONNECTOR

- 1. Turn ignition switch OFF.
- 2. Disconnect the negative battery terminal.
- 3. Check following terminals and connector for damage, bend and loose connection. (control 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

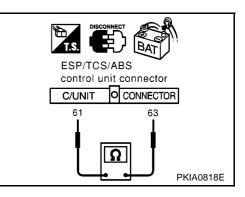
- 1. Disconnect ESP/TCS/ABS control unit connector.
- 2. Check resistance between ESP/TCS/ABS control unit harness connector B109 terminals 61(L) and 63(R).

61(L) - 63(R)

: **Approx. 54 – 66**Ω

OK or NG

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



EKS004X2

Steering Angle Sensor Circuit Check

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. (sensorside and harness-side)

OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

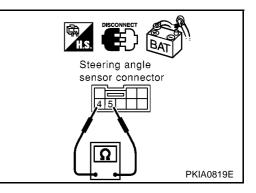
- 1. Disconnect steering angle sensor connector.
- Check resistance between steering angle sensor harness connector M33 terminals 4(L) and 5(R).

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.



CAN STSTEM (TTPE 5)	[CAN]
Smart Entrance Control Unit Circuit Check	
. CHECK CONNECTOR	EKS004X3
. Turn ignition switch OFF.	
Disconnect the negative battery terminal.	
 Check terminals and connector of smart entrance control unit for damage, bend an tion.(control unit-side and harness-side) 	nd loose connec-
DK or NG	
OK >> GO TO 2.	
NG >> Repair terminal or connector.	
2. CHECK HARNESS FOR OPEN CIRCUIT	
. Disconnect smart entrance control unit connector.	
 Check resistance between smart entrance control unit harness connector M41 terminals 8(L) and 11(R). 	
8(L) – 11(R) : Approx. 54 – 66Ω	BAT
Smart entranc Unit connector	
	8
OK >> Replace smart entrance control unit. NG >> Repair harness between steering angle sensor and	
OK >> Replace smart entrance control unit.	
OK >> Replace smart entrance control unit. NG >> Repair harness between steering angle sensor and	
OK >> Replace smart entrance control unit. NG >> Repair harness between steering angle sensor and	
OK >> Replace smart entrance control unit. NG >> Repair harness between steering angle sensor and smart entrance control unit.	
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	PKIA0820E
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 . CHECK CONNECTOR	
OK >> Replace smart entrance control unit. NG >> Repair harness between steering angle sensor and smart entrance control unit. Fyre Pressure Monitoring Control Unit Circuit Check I. CHECK CONNECTOR I. Turn ignition switch OFF.	
 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 CHECK CONNECTOR 1. Turn ignition switch OFF. 2. Disconnect the negative battery terminal. 	EKS004X4
 OK >> Replace smart entrance control unit. NG >> Repair harness between steering angle sensor and smart entrance control unit. Fyre Pressure Monitoring Control Unit Circuit Check CHECK CONNECTOR 1. Turn ignition switch OFF. 2. Disconnect the negative battery terminal. 	EKS004X4
 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 CHECK CONNECTOR Turn ignition switch OFF. Disconnect the negative battery terminal. Check terminals and connector of tyre pressure monitoring control unit for damage, between the terminal substant of termina	EKS004X4
 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 CHECK CONNECTOR Turn ignition switch OFF. Disconnect the negative battery terminal. Check terminals and connector of tyre pressure monitoring control unit for damage, bet nection.(control unit-side and harness-side) DK or NG OK >> GO TO 2. 	EKS004X4
 OK >> Replace smart entrance control unit. NG >> Repair harness between steering angle sensor and smart entrance control unit. Fyre Pressure Monitoring Control Unit Circuit Check CHECK CONNECTOR Turn ignition switch OFF. Disconnect the negative battery terminal. Check terminals and connector of tyre pressure monitoring control unit for damage, bet nection.(control unit-side and harness-side) DK or NG OK >> GO TO 2. NG >> Repair terminal or connector. 	EKS004X4
 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 CHECK CONNECTOR Turn ignition switch OFF. Disconnect the negative battery terminal. Check terminals and connector of tyre pressure monitoring control unit for damage, bet nection.(control unit-side and harness-side) DK or NG OK >> GO TO 2. 	EKS004X4
 OK >> Replace smart entrance control unit. NG >> Repair harness between steering angle sensor and smart entrance control unit. Fyre Pressure Monitoring Control Unit Circuit Check CHECK CONNECTOR Turn ignition switch OFF. Disconnect the negative battery terminal. Check terminals and connector of tyre pressure monitoring control unit for damage, bet nection.(control unit-side and harness-side) DK or NG OK >> GO TO 2. NG >> Repair terminal or connector. 	EKS004X4
 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 CHECK CONNECTOR I. Turn ignition switch OFF. Disconnect the negative battery terminal. Check terminals and connector of tyre pressure monitoring control unit for damage, bet nection.(control unit-side and harness-side) OK >> GO TO 2. OK >> GO TO 2. NG >> Repair terminal or connector. 2. CHECK HARNESS FOR OPEN CIRCUIT I. Disconnect tyre pressure monitoring control unit connector. 2. Check resistance between tyre pressure monitoring control unit	EKS004X4
 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 CHECK CONNECTOR Turn ignition switch OFF. Disconnect the negative battery terminal. Check terminals and connector of tyre pressure monitoring control unit for damage, bet nection.(control unit-side and harness-side) OK or NG OK >> GO TO 2. NG >> Repair terminal or connector. CHECK HARNESS FOR OPEN CIRCUIT Disconnect tyre pressure monitoring control unit harness connector M96 terminals 7(L) and 5(R). 	EKS004X4
 OK >> Replace smart entrance control unit. NG >> Repair harness between steering angle sensor and smart entrance control unit. Fyre Pressure Monitoring Control Unit Circuit Check CHECK CONNECTOR Turn ignition switch OFF. Disconnect the negative battery terminal. Check terminals and connector of tyre pressure monitoring control unit for damage, bet nection.(control unit-side and harness-side) OK or NG OK >> GO TO 2. NG >> Repair terminal or connector. CHECK HARNESS FOR OPEN CIRCUIT Disconnect tyre pressure monitoring control unit connector. Check resistance between tyre pressure monitoring control unit harness connector M96 terminals 7(L) and 5(R). T(L) - 5(R) : Approx. 54 - 66Ω 	EKS004X4
OK >> Replace smart entrance control unit. NG >> Repair harness between steering angle sensor and smart entrance control unit. Fyre Pressure Monitoring Control Unit Circuit Check 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, between the nection.(control unit-side and harness-side) OK or NG OK >> 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). r(L) - 5(R) : Approx. 54 - 66\Omega DK or NG	EKS004X4
OK >> Replace smart entrance control unit. NG >> Repair harness between steering angle sensor and smart entrance control unit. Fyre Pressure Monitoring Control Unit Circuit Check 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, bet nection.(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 - 66\Omega OK or NG OK >> Replace tyre pressure monitoring control unit.	EKS004X4
OK >> Replace smart entrance control unit. NG >> Repair harness between steering angle sensor and smart entrance control unit. Fyre Pressure Monitoring Control Unit Circuit Check 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, bernection.(control unit-side and harness-side) OK or NG OK >> GO TO 2. NG >> Repair terminal or connector. 2. Check resistance between tyre pressure monitoring control unit for damage, between store science tyre pressure monitoring control unit for damage. 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). T(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	EKS004X4
OK >> Replace smart entrance control unit. NG >> Repair harness between steering angle sensor and smart entrance control unit. Fyre Pressure Monitoring Control Unit Circuit Check 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, bet nection.(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 - 66\Omega OK or NG OK >> Replace tyre pressure monitoring control unit.	EKS004X4
OK >> Replace smart entrance control unit. NG >> Repair harness between steering angle sensor and smart entrance control unit. Fyre Pressure Monitoring Control Unit Circuit Check 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, bernection.(control unit-side and harness-side) OK or NG OK >> GO TO 2. NG >> Repair terminal or connector. 2. Check resistance between tyre pressure monitoring control unit for damage, between store science tyre pressure monitoring control unit for damage. 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). T(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	EKS004X4

Combination Meter Circuit Check

1. CHECK CONNECTOR

- 1. Turn ignition switch OFF.
- 2. Disconnect the negative battery terminal.
- 3. Check terminals and connector of combination meter for damage, 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

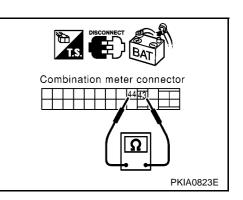
- 1. Disconnect combination meter connector.
- Check resistance between combination meter harness connector M37 terminals 43(L) and 44(R).

43(L) – 44(R)

: **Approx. 108 – 132**Ω

OK or NG

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



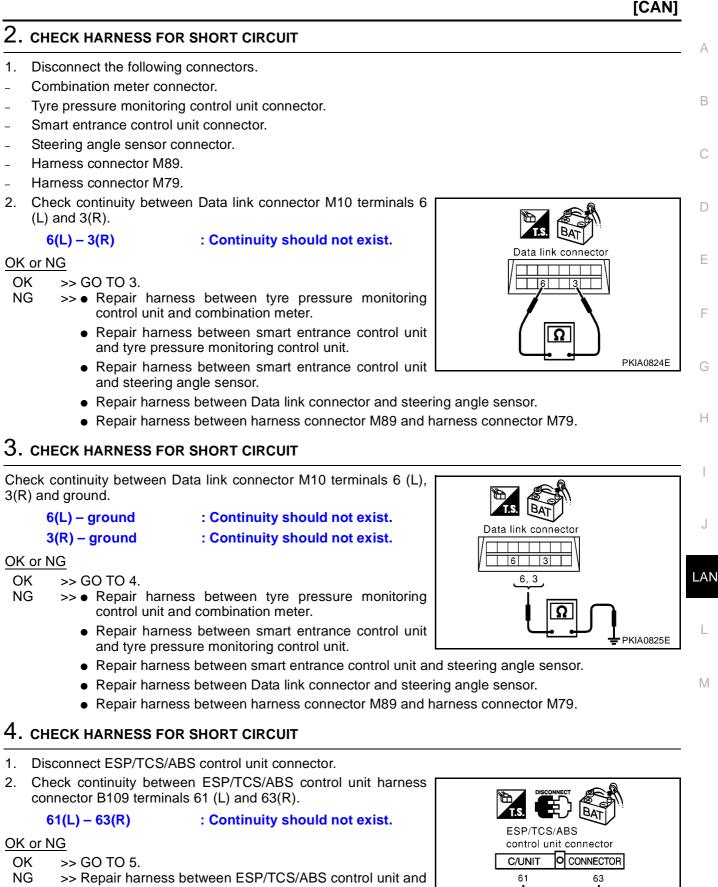
CAN Communication Circuit Check

1. CHECK CONNECTOR

- 1. Turn ignition switch OFF.
- 2. Disconnect the negative battery terminal.
- 3. Check following terminals and connector for damage, 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.

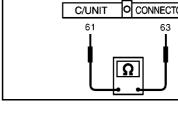
EKS004X5

EKS004X6



LAN-135

harness connector B102.



PKIA0818E

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
- 63(R) ground
- : Continuity should not exist.

: Continuity should not exist.

: Continuity should not exist.

OK or NG

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

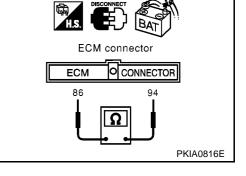
6. CHECK HARNESS FOR SHORT CIRCUIT

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

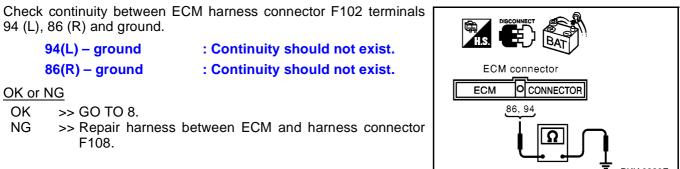
94(L) - 86(R)

OK or NG

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



7. CHECK HARNESS FOR SHORT CIRCUIT

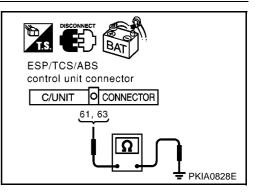


8. ECM / COMBINATION METER INTERNAL CIRCUIT INSPECTION

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 CON-SULT-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.





LAN-137

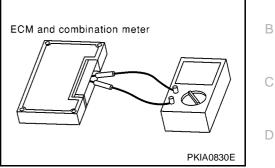
[CAN]

EKS004X7

Component Inspection 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	Applox. 100 - 132





F

G

Н

А



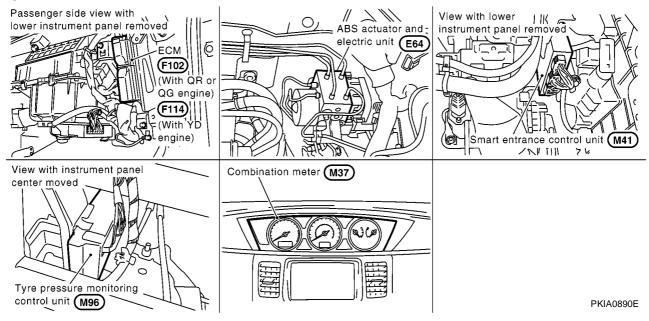
LAN

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System Description

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

Component Parts and Harness Connector Location



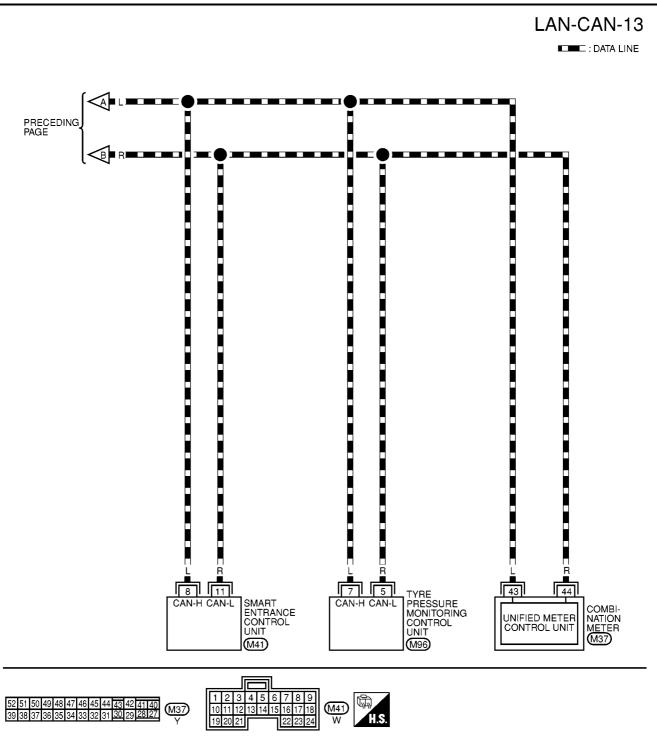
EKS004WH

EKS004WI

[CAN] Wiring Diagram — CAN — EKS004WJ А G: WITH GASOLINE ENGINE LAN-CAN-12 S: SEDAN WAGON : WAGON DATA LINE QR : WITH QR ENGINE *1 94 : G QG: WITH QG ENGINE В E11 : D **__**L **|** *3 L *2 86 : G (F108 OR) (M79 NEXT PAGE E10: D (F109 QG (M77) (QG) С (F110) *3 3: QR D : 14 : 📿 G ⊐== R ∎B> *4 1: D D *4 2: QR 15 : QG 4 : D Е *5 G: S R : 🖤 F (M8 **T** Н 8 (B10) **(**B10 12 J R LAN R R R *2 3 *****1 26 15 6 ABS ACTUATOR AND ELECTRIC UNIT (CONTROL UNIT) L CAN-H CAN-L CAN-H CAN-L ECM CAN-L CAN-H DATA LINK CONNECTOR (F102) : G (M10) (F114) : () (E64) Μ REFER TO THE FOLLOWING. (F102), (F114) -ELECTRICAL UNITS 16 15 14 13 12 11 10 9 1 2 3 **4** 5 6 7 8 9 10 11 12 13 14 15 16 (M10)), (F108) W (M89) 8765432 1 W 26 25 24 23 22 21 20 19 18 17 16 123456 E120 GY 4 З 2 1 (E64) 15 14 13 12 11 10 9 8 7 6 5 1 2 3 4 5 6 **—** 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 123 45678 F110 W (F109) W

MKWA0235E





151413121110987654321 (M96)

MKWA0236E

Work Flow

vvc	DIK FIOW EKS004WK	
1.	Print all the data of "SELF-DIAG RESULTS" and "DATA MONITOR" for "ENGINE", "ABS", "SMART	А
	ENTRANCE", and "AIR PRESSURE MONITOR" displayed on CONSULT-II. Refer to <u>EC-150, "DTC</u>	
	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),	В
	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	C
	"ENGINE" and Refer to <u>BRC-33, "CAN Communication Circuit"</u> for "ABS". Refer to <u>BCS-40, "CAN Com-</u>	C
	munication 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"	D
3.	Based on the data monitor results, put "v" marks onto the items with "UNKWN" or "NG" in the check sheet table. Refer to <u>LAN-142</u> , "CHECK SHEET"	E

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 <u>LAN-143</u>, "CHECK SHEET F <u>RESULTS (EXAMPLE)"</u>

LAN-141

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CHECK SHEET

Check sheet table CAN COMM CAN CIRC 1 CAN CIRC 4 ENGINE _ _ _ ABS CAN COMM CAN CIRC 1 CAN CIRC 2 _ --SMART ENTRANCE CAN COMM CAN CIRC 1 CAN CIRC 2 CAN CIRC 3 _ _ AIR PRESSURE CAN COMM CAN CIRC 1 _ CAN CIRC 2 _ _ _ MONITOR Symptoms: Attach copy of Attach copy of Attach copy of Attach copy of AIR PRESSURE ENGINE ABS SMART ENTRANCE MONITOR SELF-DIAG RESULTS SELF-DIAG RESULTS SELF-DIAG RESULTS SELF-DIAG RESULTS Attach copy of Attach copy of Attach copy of Attach copy of AIR PRESSURE ENGINE SMART ENTRANCE MONITOR ABS DATA MONITOR DATA MONITOR DATA MONITOR DATA MONITOR

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CHECK SHEET RESULTS (EXAMPLE)

NR PRESSURE MONITOR ENGINE ABS	CANCOMM CAN COMM CAN COMM CAN COMM	CAN CIRC 1 CAN CIRC 1	-	_	-	-	CAN CIRC 4
SMART ENTRANCE AIR PRESSURE MONITOR ENGINE ABS SMART ENTRANCE	CAN COMM		CAN CIRC 2	-	-	-	_
MONITOR ENGINE ABS		CAN CIRC 1	CAN CIRC 2	-	-	-	CAN CIRC 3
ENGINE ABS		CAN CIRC 1	_	_	_	_	CAN CIRC 2
ABS							OAN OIN 02
	CAN COMM	CAN CIRC 1	-	_	-	-	CANORC 4
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2	_	-	_	_
	CAN COMM	CAN CIRC 1	CAN CIRC 2	_	_	_	CAN CIRC 3
AIR PRESSURE MONITOR	CAN COMM	CAN CIRC 1	-	_	_	_	CAN CIRC 2
ase 2: Replace ABS actua	ator and electric unit	(control unit)					
ENGINE	CAN COMM	CAN CIRC 1	_	_	_	_	CAN CIRC 4
ABS		CAN CIRC 1	CAN CIRC 2			_	
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2	_	_	_	CAN CIRC 3
AIR PRESSURE		CAN CIRC 1	-	_		_	
MONITOR	CAN COMM	CAN CIRC 1		_	-		CAN CIRC 2
ENGINE	CAN COMM	CAN CIRC 1		_	_	_	CAN CIRC 4
ABS	CAN COMM	CAN CIRC 1	CANORC 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 COMM	CAN CIRC 1 CAN CIRC 1	– CAN CIRC 2	-	_ _	_ _	CAN CIRC 4
ENGINE ABS SMART ENTRANCE AIR PRESSURE	CAN COMM						CAN CIRC 4 – CAN CIRC 3 CAN CIRC 2
ENGINE ABS SMART ENTRANCE AIR PRESSURE MONITOR	CAN COMM CAN COMM CAN COMM CAN COMM	CAN CIRC 1 CAN CIRC 1 CAN CIRC 1	CAN CIRC 2 CAN CIRC 2 —	_ _ _	- - -	_ _ _	CAN CIRC 3 CAN CIRC 2
ENGINE ABS SMART ENTRANCE AIR PRESSURE MONITOR ENGINE	CAN COMM CAN COMM CAN COMM CAN COMM	CAN CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1	CAN CIRC 2 CAN CIRC 2 —		- - -	_ 	– CAN CIRC 3
ENGINE ABS SMART ENTRANCE AIR PRESSURE MONITOR ENGINE ABS	CAN COMM CAN COMM CAN COMM CAN COMM CAN COMM CAN COMM	CAN CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1	CAN CIRC 2 CAN CIRC 2 — — CAN CIRC 2	-	- - -	_ _ _	CAN CIRC 3 CAN CIRC 2 CAN CIRC 4
ENGINE ABS SMART ENTRANCE AIR PRESSURE MONITOR ENGINE ABS SMART ENTRANCE AIR PRESSURE	CAN COMM CAN COMM CAN COMM CAN COMM	CAN CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1	CAN CIRC 2 CAN CIRC 2 —		- - -	- - - -	CAN CIRC 3 CAN CIRC 2
ENGINE ABS SMART ENTRANCE AIR PRESSURE MONITOR ENGINE ABS SMART ENTRANCE AIR PRESSURE MONITOR ase 4: Replace Tyre pres	CAN COMM CAN COMM CAN COMM CAN COMM CAN COMM CAN COMM CAN COMM	CAN CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1	CAN CIRC 2 CAN CIRC 2 — — CAN CIRC 2	-	- - -	- - - -	CAN CIRC 3 CAN CIRC 2 CAN CIRC 4 CAN CIRC 4 CAN CIRC 3 CAN CIRC 2
ENGINE ABS SMART ENTRANCE AIR PRESSURE MONITOR ENGINE ABS SMART ENTRANCE AIR PRESSURE MONITOR ase 4: Replace Tyre pres ENGINE	CAN COMM CAN COMM CAN COMM CAN COMM CAN COMM CAN COMM CAN COMM CAN COMM	CAN CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1	CAN CIRC 2 CAN CIRC 2 - CAN CIRC 2 CAN CIRC 2 CAN CIRC 2 -	- - - - -			CAN CIRC 3 CAN CIRC 2 CAN CIRC 4 CAN CIRC 4 CAN CIRC 3
ABS SMART ENTRANCE AIR PRESSURE MONITOR ENGINE	CAN COMM CAN COMM CAN COMM CAN COMM CAN COMM CAN COMM CAN COMM	CAN CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1	CAN CIRC 2 CAN CIRC 2 - CAN CIRC 2 CAN CIRC 2 CAN CIRC 2 -	- - - - -			CAN CIRC 3 CAN CIRC 2 CAN CIRC 4 CAN CIRC 4 CAN CIRC 3 CAN CIRC 2

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[CAN]

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Case 6

Case o							
ENGINE	CAN COMM	CAN CIRC 1	-	-	-	-	CANORC 4
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2		_	—	-
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2		—	—	CANORC 3
AIR PRESSURE MONITOR	CAN COMM	CAN CIRC 1	—	_	—	_	CAN CIRC 2

Case 7	

ENGINE	CAN COMM	CANORC 1	—		—	—	CANORC 4
ABS	CAN COMM	CAN CIRC 1	CANORC 2	1	_	_	_
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CANORC 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	CANORC 1	CANORC 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

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0436 3							
ENGINE	CAN COMM	CAN CIRC 1	-	_	_	_	CAN CIRC 4
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2		—	—	—
SMART ENTRANCE	CAN COMM	CANORC 1	CANORC 2	1	—	-	CANORC 3
AIR PRESSURE MONITOR	CAN COMM	CAN CIRC 1	-	-	—	—	CAN CIRC 2

Case 10

Case IU							
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	CANOR 1	—	—	_	_	CAN CAN CAN

Case 11

0460 11							
ENGINE	CAN COMM	CAN CIRC 1	_	-	_	_	CANORC 4
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	-	-	-	-
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2	_	_	-	CANORC 3
AIR PRESSURE MONITOR	CAN COMM	CAN CIRC 1	_	-	_	_	CANORC 2

Case 12	

ENGINE	CAN COMM	CANOIRC 1	_	_	_	_	CANOIRC 4
ABS	CAN COMM	CANORC 1	CANORC 2	_	-	-	—
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CANORC 2	_	_	_	CANOIRC 3
AIR PRESSURE MONITOR	CAN COMM	CAN ORC 1	_	_	_	_	CANARC 2

NOTE:

If "NG" is displayed on "CAN COMM" for the diagnosed control unit, replace the control unit.

LAN-144

	[CAN]
INSPE	CTION
	ed trouble diagnosis according to the check sheet results (example).
	Replace ECM.
	Replace ABS actuator and electric unit (control unit).
	B:Replace Smart entrance control unit.
	EReplace Tyre pressure monitoring control unit. ECheck Harness between Data link connector and Smart entrance control unit. Refer to LAN-145, "Cir-
	eck Between Data Link Connector and Smart Entrance Control Unit"
	S:Check Harness between Smart entrance control unit and Tyre pressure monitoring control unit. Refer
	-146, "Circuit Check Between Smart Entrance Control Unit and Tyre Pressure Monitoring Control Unit"
	Check ECM Circuit. Refer to LAN-147, "ECM Circuit Check"
	B:Check ABS actuator and electric unit (control unit) Circuit. Refer to LAN-148, "ABS Actuator and Elec-
	it (control unit) Circuit Check"
Case s Check	9:Check Smart entrance control unit Circuit. Refer to LAN-148, "Smart Entrance Control Unit Circuit
	10:Check Tyre pressure monitoring control unit Circuit. Refer to LAN-149, "Tyre Pressure Monitoring
	I Unit Circuit Check"
Case 1	1:Check Combination meter Circuit. Refer to LAN-149, "Combination Meter Circuit Check"
Case 1	2:Check CAN communication Circuit. Refer to LAN-150, "CAN Communication Circuit Check"
Circu	it Check Between Data Link Connector and Smart Entrance Control Unit
1. сн	
1. Tu	rn ignition switch OFF.
2. Di	sconnect the negative battery terminal.
3. Ch	neck following terminals and connector for damage, bend and loose connection. (control unit-side and
	rness-side)
 Sn 	nart entrance control unit.
AE	3S actuator and electric unit (control unit).
	stween smart entrance control unit and ABS actuator and electric unit (control unit).
OK or I	
OK NG	>> GO TO 2.
OK NG	>> GO TO 2. >> Repair terminal or connector.

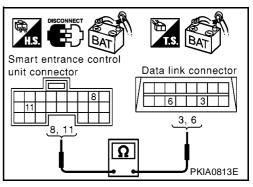
2. CHECK HARNESS FOR OPEN CIRCUIT

- 1. Disconnect smart entrance control unit connector.
- 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).
 - : Continuity
 - 11(R) 3(R)

8(L) - 6(L)

: Continuity should exist. : 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 <u>EC-150,</u> "DTC U1000, U1001 CAN COMMUNICATION LINE"



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(QG ENGINE MODELS WITH EURO-OBD), <u>EC-663</u>, "DTC U1000, U1001 CAN COMMUNICA-<u>TION LINE</u>" (QG ENGINE MODELS WITHOUT EURO-OBD), <u>EC-1083</u>, "DTC U1000, U1001 <u>CAN COMMUNICATION LINE</u>" (QR ENGINE MODELS WITH EURO-OBD), <u>EC-1505</u>, "DTC U1000, U1001 CAN COMMUNICATION LINE" (QR ENGINE MODELS WITHOUT EURO-OBD) or <u>EC-1790</u>, "DTC U1000 CAN COMMUNICATION LINE" (YD ENGINE MODELS) for "ENGINE" and Refer to <u>BRC-33</u>, "CAN Communication Circuit" for "ABS". Refer to <u>BCS-40</u>, "CAN Commu-

<u>nication Line Check</u>" for "SMART ENTRANCE". Refer to <u>WT-35</u>, "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

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.

11(R) - 5(R)

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.

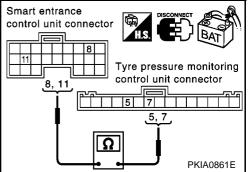
: Continuity should exist.

- 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.

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 <u>EC-150</u>, "DTC U1000, U1001 CAN COMMUNICATION LINE"



(QG ENGINE MODELS WITH EURO-OBD), <u>EC-663</u>, "DTC U1000, U1001 CAN COMMUNICA-<u>TION LINE</u>" (QG ENGINE MODELS WITHOUT EURO-OBD), <u>EC-1083</u>, "DTC U1000, U1001 <u>CAN COMMUNICATION LINE</u>" (QR ENGINE MODELS WITH EURO-OBD), <u>EC-1505</u>, "DTC <u>U1000</u>, U1001 CAN COMMUNICATION LINE" (QR ENGINE MODELS WITHOUT EURO-OBD) or <u>EC-1790</u>, "DTC U1000 CAN COMMUNICATION LINE" (YD ENGINE MODELS) for "ENGINE" and Refer to <u>BRC-33</u>, "CAN Communication Circuit" for "ABS". Refer to <u>BCS-40</u>, "CAN Communication Line Check" for "SMART ENTRANCE". Refer to <u>WT-35</u>, "Inspection 4: CAN Communication Line" for "AIR PRESSURE MONITOR".

NG >> Repair harness.

PKIA0837E

ECM Circuit Check EKS004WM А **1. CHECK CONNECTOR** 1. Turn ignition switch OFF. В 2. Disconnect the negative battery terminal. 3. Check following terminals and connector for damage, bend and loose connection. (control module-side and harness-side) С ECM. Harness connector F108.(QR engine models) Harness connector M79.(QR engine models) D Harness connector F109.(QG engine models) Harness connector M77.(QG engine models) Harness connector F110.(Diesel engine models) E Harness connector M80.(Diesel engine models) OK or NG OK >> GO TO 2. F NG >> Repair terminal or connector. 2. CHECK HARNESS FOR OPEN CIRCUIT Disconnect ECM connector. 1. 2. Check the following. Н Resistance between ECM harness connector F102 terminals 94(L) and 86(R).(Gasoline engine models) 94(L) - 86(R) (Gasoline : Approx. 108 – 132Ω enging models) ECM connector ECM 86 94 LAN **PKIA0816E** Resistance between ECM harness connector F114 terminals L E11(L) and E10(R).(Diesel engine models) E11(L) – E10(R) (Diesel : Approx. 108 – 132 Ω ECM connector enging models) Μ O CONNECTOR ECM OK or NG OK >> Replace ECM. E10 E11 NG >> Repair harness between Data link connector and ECM.

ABS Actuator and Electric Unit (control unit) Circuit Check

1. CHECK CONNECTOR

- 1. Turn ignition switch OFF.
- 2. Disconnect the negative battery terminal.
- 3. Check following terminals and connector for damage, bend and loose connection. (control 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.

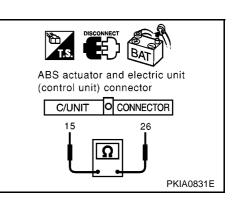
2. CHECK HARNESS FOR OPEN CIRCUIT

- 1. Disconnect ABS actuator and electric unit (control unit) connector.
- 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** – **66**Ω

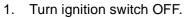
OK or NG

- 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

1. CHECK CONNECTOR



- 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.

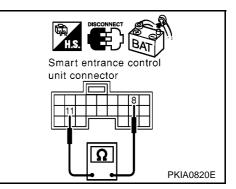
2. CHECK HARNESS FOR OPEN CIRCUIT

- 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

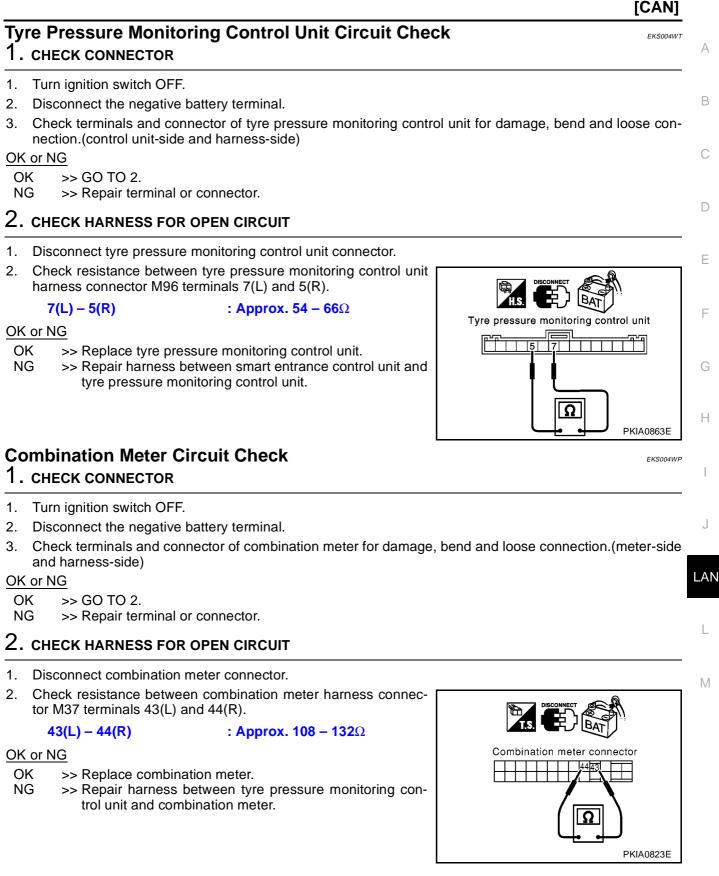
OK or NG

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



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[CAN]



CAN Communication Circuit Check

1. CHECK CONNECTOR

- 1. Turn ignition switch OFF.
- 2. Disconnect the negative battery terminal.
- 3. Check following terminals and connector for damage, 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)
- Check continuity between Data link connector M10 terminals 6 (L) and 3(R).

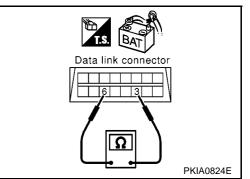
6(L) – 3(R)

: 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)



[CAN]

3. CHECK HARNESS FOR SHORT CIRCUIT

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

- 6(L) ground
- 3(R) ground

: Continuity should not exist. : 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)

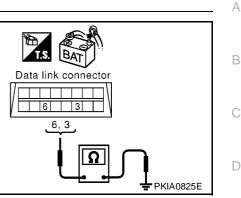
4. CHECK HARNESS FOR SHORT CIRCUIT

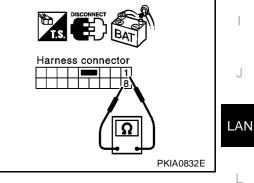
- 1. Disconnect harness connector B107.
- 2. Check the following.
- Continuity between harness connector B102 terminals 1 (L) and • 8(G).(Sedan models)
- Continuity between harness connector B102 terminals 1 (L) and 8(R).(Wagon models)

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

OK or NG

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





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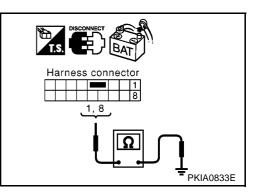
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5. CHECK HARNESS FOR SHORT CIRCUIT

- 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.

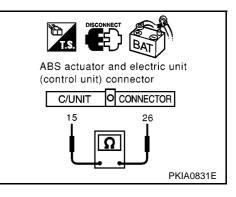
6. CHECK HARNESS FOR SHORT CIRCUIT

- 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.

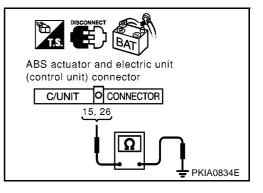
26(L) – ground : Continuity should not exist.

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.



[CAN]

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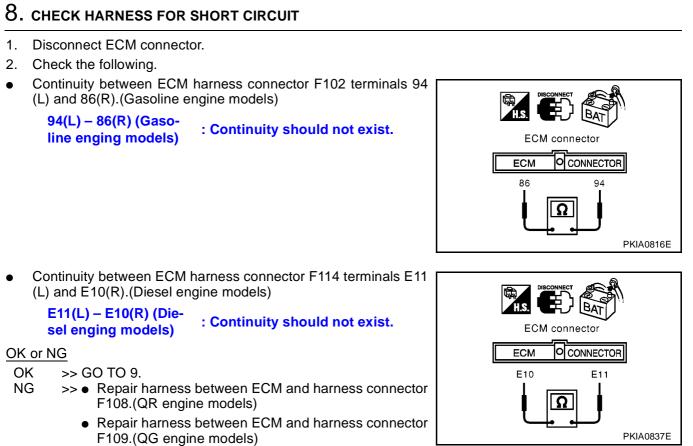
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• Repair harness between ECM and harness connector F110.(Diesel engine models)



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9. CHECK HARNESS FOR SHORT CIRCUIT

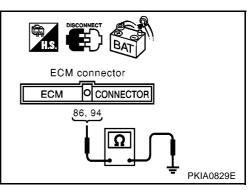
- 1. Check the following.
- Continuity between ECM harness connector F102 terminals 94 (L), 86 (R) and ground.(Gasoline engine models)

```
line enging models)
86(R) – ground (Gas-
oline enging models)
```

94(L) - ground (Gaso-

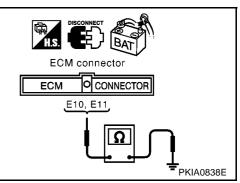
: Continuity should not exist.

: 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 mod- : Continuity should not exist.
els)
E10(R) – ground
(Diesel enging mod- : Continuity should not exist.
els)
```



OK or NG

NG

- OK >> GO TO 10.
 - >> 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 <u>LAN-155, "ECM / COMBINATION METER INTERNAL CIRCUIT</u> <u>INSPECTION"</u>

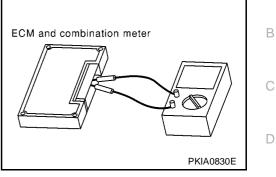
OK or NG

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

Component Inspection 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	
ECM (Diesel engine models)	E11 – E10	Approx. 108 - 132
Combination meter	43 – 44	



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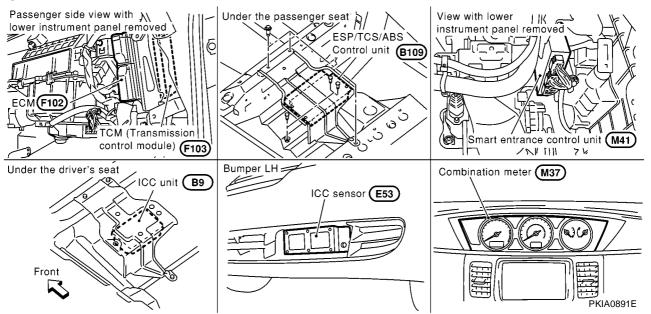
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System Description

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

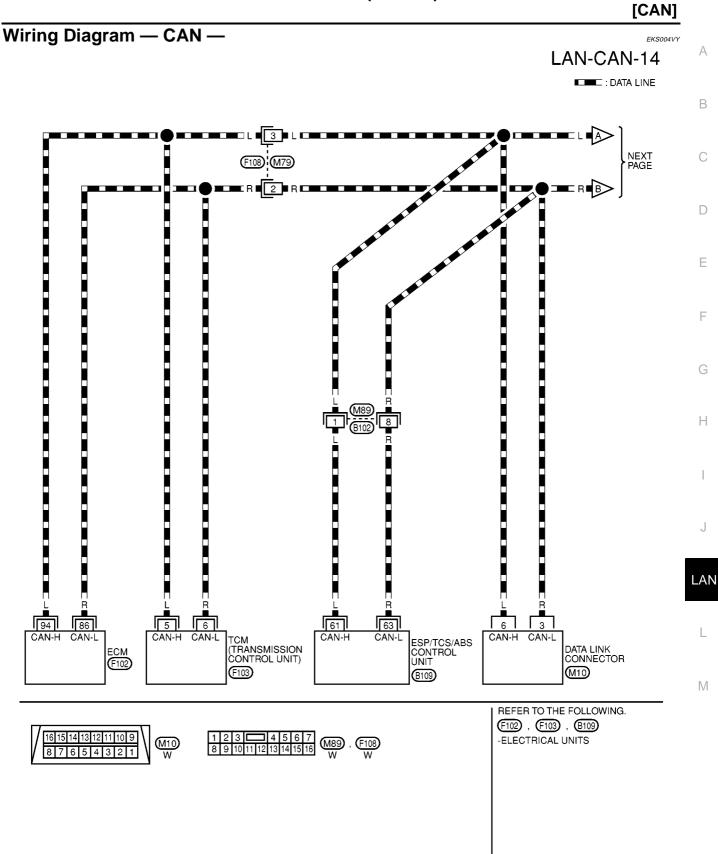
Component Parts and Harness Connector Location



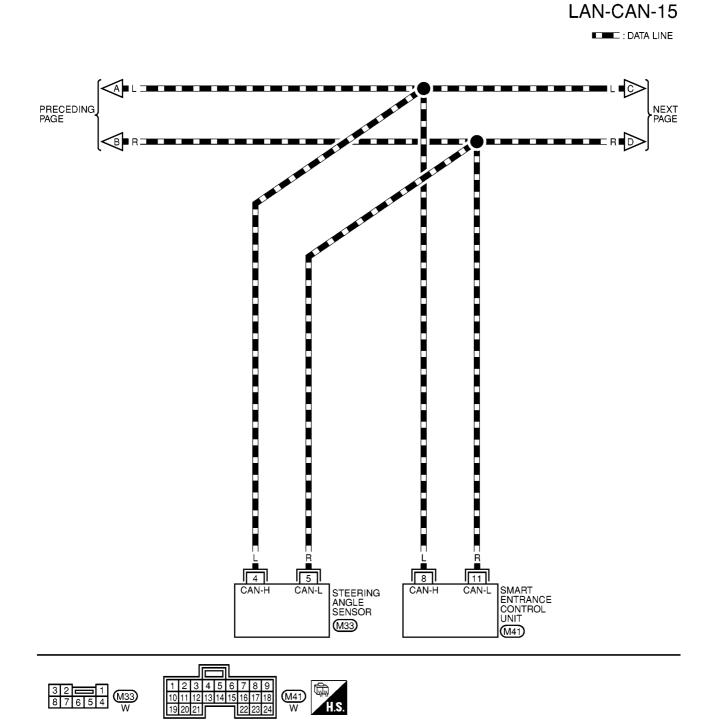
EKS004VW

EKS004VX





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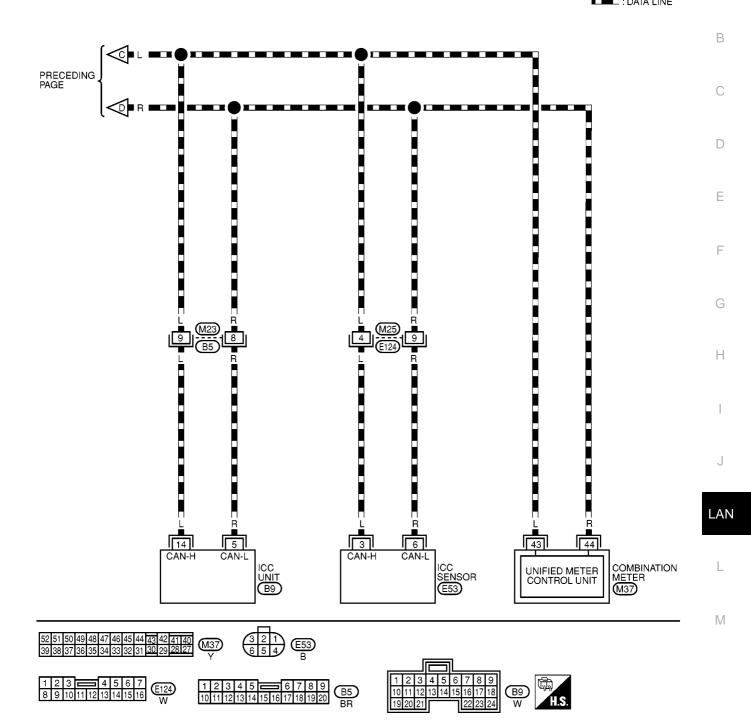
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Work Flow

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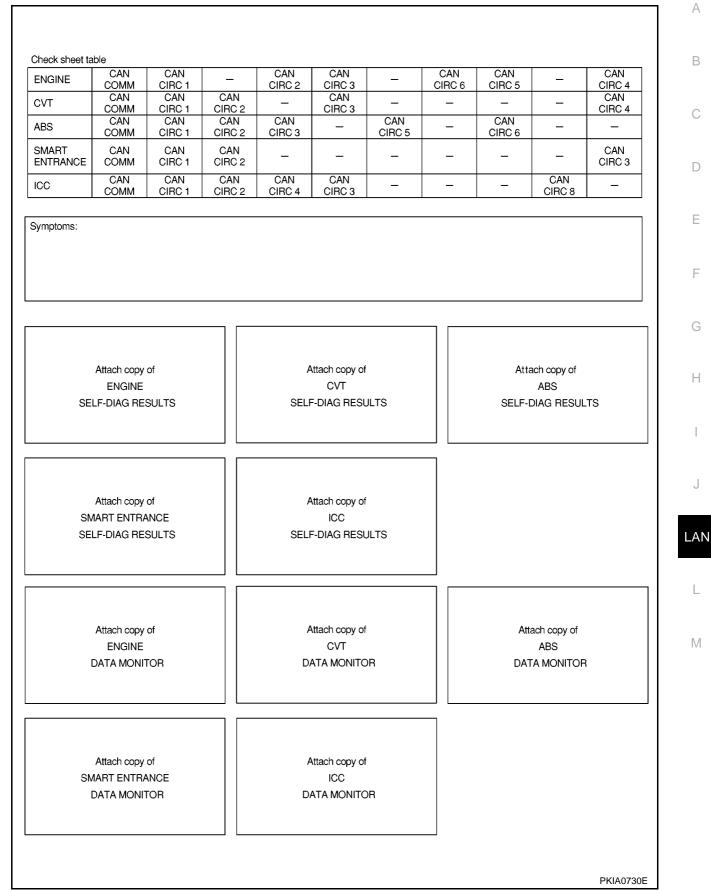
- Print all the data of "SELF-DIAG RESULTS" and "DATA MONITOR" for "ENGINE", "CVT", "ABS", "SMART ENTRANCE", and "ICC" displayed on CONSULT-II. Refer to <u>EC-1083</u>, "DTC U1000, U1001 CAN COM-<u>MUNICATION LINE"</u> (WITH EURO-OBD) or <u>EC-1505</u>, "DTC U1000, U1001 CAN COMMUNICATION <u>LINE"</u> (WITHOUT EURO-OBD) for "ENGINE" and Refer to <u>CVT-118</u>, "DTC U1000 CAN COMMUNICA-<u>TION LINE"</u> (EURO-OBD) or <u>CVT-201</u>, "CAN COMMUNICATION LINE" (ALL) for "CVT". Refer to <u>BRC-107</u>, "Inspection 15 CAN Communication Circuit, ESP/TCS/ABS Control Unit and Steering Angle Sensor" for "ABS". Refer to <u>BCS-40</u>, "CAN Communication Line Check" for "SMART ENTRANCE". Refer to <u>ACS-46</u>, "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 <u>LAN-161, "CHECK SHEET"</u>
- Based on the data monitor results, put "v" marks onto the items with "UNKWN" or "NG" in the check sheet table. Refer to <u>LAN-161</u>, "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 <u>LAN-162, "CHECK SHEET</u> <u>RESULTS (EXAMPLE)"</u>

CHECK SHEET



CHECK SHEET RESULTS (EXAMPLE)

ENGINE	CAN COMM	CAN CIRC 1	_	CAN CIRC 2	CAN CIRC 3	-	CAN CIRC 6	CAN CIRC 5	-	CAN CIRC 4
сvт	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 CINC 2	CAN CINC 3	-	CAM CINC 6	CAN CNC 5	-	CAN CINC 4
с∨т	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
				<u> </u>	0.4.1				CAN	
ase 2: Replace	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	CAN CIRC 3		 		CAN CIRC 8	
		CIRC 1	CAN CIRC 2	CIRC 4	CIRC 3	_ 				
	COMM TCM CAN COMM	CIRC 1	CIRC 2		CIRC 3		CAN CIRC 6	CAN CIRC 5		CAN CIRC 4
ase 2: Replace		CIRC 1 CAN CIRC 1 CAN CIRC 1	CIRC 2	CIRC 4	CIRC 3	_		CIRC 5 —	CIRC 8	
ase 2: Replace ENGINE CVT	COMM TCM CAN COMM	CIRC 1	CIRC 2	CIRC 4	CIRC 3	– – CAN CIRC 5	CIRC 6		CIRC 8	CIRC 4 CAN
ase 2: Replace	COMM TCM CAN COMM CAM CAN	CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1	CIRC 2	CIRC 4 CAN CINC 2 — CAN CINC 3 —	CIRC 3 CAN CIRC 3 CAN CIRC 3	– CAN	CIRC 6	CIRC 5 — CAN	CIRC 8	CIRC 4 CAN
ase 2: Replace ENGINE CVT ABS SMART ENTRANCE	COMM TCM CAN CAN COMM CAN CAN COMM CAN	CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN	CIRC 2	CIRC 4	CIRC 3 CAN CIRC 3 CAN CIRC 3	– CAN	CIRC 6	CIRC 5 — CAN	CIRC 8	CIRC 4 CAN CIRC 4 — CAN
ase 2: Replace ENGINE CVT ABS SMART ENTRANCE	COMM TCM CAN COMM CAN COMM CAN COMM CAN COMM CAN CAN CAN	CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN	CIRC 2	CIRC 4 CAN CINC 2 — CAN CINC 3 — CAN CINC 4	CIRC 3 CAN CIRC 3 CAN CIRC 3 - CAN CIRC 3 CAN CIRC 3	CAN CIRC 5	CIRC 6 CAN	CIRC 5 — CAN CIRC 6 — — — CAN	CIRC 8	CIRC 4 CAN CIRC 4 CAN CIRC 3 CAN
ase 2: Replace ENGINE CVT ABS SMART ENTRANCE ICC	COMM CAN CAN CAN CAN CAN CAN CAN CAN CAN CAN	CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1	CIRC 2	CIRC 4 CAN CINC 2 - CAN CINC 3 - CAN CINC 4	CIRC 3 CAN CIRC 3 CAN CIRC 3 - CAN CIRC 3 CAN CIRC 3	CAN CIRC 5	CIRC 6 	CIRC 5 — CAN CIRC 6 — —	CIRC 8	CIRC 4 CAN CIRC 4 CAN CIRC 3 - CAN CIRC 4
ase 2: Replace ENGINE CVT ABS SMART ENTRANCE ICC ENGINE CVT	COMM CAN CAN CAN COMM CAN COMM CAN COMM CAN COMM CAN COMM CAN COMM CAN	CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN	CIRC 2	CIRC 4 CAN CINC 2 - CAN CINC 3 - CAN CINC 3 - CAN CINC 4 CAN CIRC 2 - CAN	CIRC 3 CAN CIRC 3 CAN CIRC 3 - CAN CIRC 3 CAN CIRC 3		CIRC 6 — — — — — CAN CIRC 6	CIRC 5 — CAN CIRC 6 — — — CAN	CIRC 8	CIRC 4 CAN CIRC 4 CAN CIRC 3 CAN
CVT ABS SMART ENTRANCE ICC ENGINE	COMM CAN CAN CAM CAN CAN CAN CAN CAN CAN CAN CAN CAN CAN	CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1	CIRC 2	CIRC 4 CAN CINC 2 — CAN CINC 3 — CAN CINC 4 CAN CINC 4	CIRC 3 CAN CIRC 3 CAN CIRC 3 - CAN CIRC 3 CAN CIRC 3		CIRC 6 — — — — — CAN CIRC 6	CIRC 5 — CAN CIRC 6 — — CAN CIRC 5 — CAN CIRC 5	CIRC 8	CIRC 4 CAN CIRC 4 CAN CIRC 3 - CAN CIRC 4

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Case 3: Replace ESP/TCS/ABS control unit CAA CINC 3 CAN CAN CAN CAN CAN CAN ENGINE _ _ _ COMM CIRC 1 CIRC 2 CIRC 6 CIRC 5 CIRC 4 CAN CAN CINC 3 CAN CAN CAN CVT _ _ _ COMM CIRC 1 CIRC 2 CIRC 4 CAN CAN CAN CAN CAN ABS _ _ _ CIRC 1 CIRC 2 CIRC 3 CIRC 5 CIRC 6 CAN CAN CAN SMART CAN ENTRANCE COMM CIRC 1 CIRC 2 CIRC 3 CAN CAN CAN CAN CINC 3 CAN CAN ICC _ _ _ COMM CIRC 1 CIRC 2 CIRC 4 CIRC 8 CAN CAN CAN CAN CAN CAN CAN ENGINE _ _ COMM CIRC 1 CIRC 3 CIRC 5 CIRC 2 CIRC 6 CIRC 4 CAN CAN CAN CAN CAN CVT _ _ _ _ CIRC 2 COMM CIRC 1 CIRC 4 CIRC 3 CAN CINC 3 CAN CINC 2 CAN CINC 5 CAN CINC 6 CAN CAN ABS _ _ _ _ COMM CIRC 1 SMART CAN CAN CAN CAN _ _ ENTRANCE COMM CIRC 1 CIRC 2 CIRC 3 CAN CAN CAN CAN CAN CAN ICC _ _ _ _ COMM CIRC 1 CIRC 2 CIRC 4 CIRC 3 CIRC 8 Case 4: Replace Smart entrance control unit CAN CAN CAN CAN CAN CAN CAN ENGINE _ COMM CIRC 2 CIRC 3 CIRC 6 CIRC 5 CIRC 4 CIRC 1 CAN CAN CAN CAN CAN CVT _ _ _ COMM CIRC 1 CIRC 2 CIRC 3 CIRC 4 CAN CAN CAN CAN CAN CAN ABS _ _ _ COMM CIRC 1 CIRC 2 CIRC 3 CIRC 5 CIRC 6 CAN COMM SMART CAN CAN CAN _ ENTRANCE CIRC 1 CIRC 2 CIRC 3 CAN CAN CAN CAN CAN CAN ICC _ _ _ _ COMM CIRC 1 CIRC 2 CIRC 4 CIRC 3 CIRC 8 CAN CAN CAN CAN CAN CAN CAN ENGINE _ _ _ COMM CIRC 1 CIRC 2 CIRC 3 CIRC 6 CIRC 5 CIRC 4 CAN CAN CAN CAN CAN CVT COMM CIRC 1 CIRC 2 CIRC 3 CIRC 4 CAN CAN CAN CAN CAN CAN ABS _ _ _ _ CIRC 3 COMM CIRC 1 CIRC 2 CIRC 5 CIRC 6 CAN CINC 2 CAN CINC 3 SMART CAN CAN _ _ COMM ENTRANCE CIRC 1 CAN CAN CAN CAN CAN CAN ICC _ _ _ _ COMM CIRC 1 CIRC 2 CIRC 4 CIRC 3 CIRC 8

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ENGINE	CAN	CAN	_	CAN	CAN	_	CAN	CAN CINC 5	_	CAN
	COMM CAN	CIRC 1 CAN	CAN	CIRC 2	CIRC 3 CAN		CIRC 6	CINC 5		CIRC 4 CAN
CVT	COMM CAN	CIRC 1 CAN	CIRC 2 CAN	CAN	CIRC 3	CAN	_	CAM	-	CIRC 4
ABS	СОММ	CIRC 1	CIRC 2	CIRC 3	-	CIRC 5	-	CAN CINC 6	-	-
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2	-	_	-	_	_	_	CAN CIRC 3
ICC	CAM 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
сут	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 CINC 2	CAN CINC 4	CAN CINC 3	_	_	_	CAN CINC 8	_
se 6										
ENGINE	CAN COMM	CAN CIRC 1	_	CAN CIRC 2	CAN CINC 3	_	CAN CINC 6	CAN CINC 5	_	
сvт	CAN COMM	CAN CIRC 1	CAN CIRC 2	-	CAN CINC 3	_	_	_	—	CAN CINC 4
ABS	CAN COMM	CAN CIRC 1	CAN CINC 2	CAN CINC 3	_	CAN CIRC 5	_	CAN CIRC 6	_	_
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CINC 2	-	-	-	-	-	_	CAN CIRC 3
ICC	CAN COMM	CAN CIRC 1	CAN CINC 2	CAN CIMC 4	CAN CIRC 3	1	_	-	CAN CIRC 8	_
se 7										
ENGINE	CAN COMM	CAN CIRC 1	_	CAN CIRC 2	CAN CIRC 3	-	CAN CMC 6	CAN CINC 5	_	CAN CINC 4
сут	CAN COMM	CAN CIRC 1	CAN CIRC 2	_	CAN CIRC 3	_	-	_	_	
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 3	-	CAN CINC 5	_	CAN CINC 6	_	_
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CAN CNC 2	<u> </u>	_		_		_	CAN CIRC 3
ICC	CAN	CAN CIRC 1	CAN CINC 2	CAN CNC 4	CAN CINC 3	_	_	_	CAN CIRC 8	_
							I		0	1
 se 8										
ENGINE	CAN COMM	CAN CIRC 1	_	CAN CIRC 2	CAN CIRC 3	_	CAN CIRC 6	CAN CINC 5	_	CAN CINC 4
сут	CAN COMM	CAN CIRC 1	CAN CIRC 2	-	CAN CIRC 3	_	-	-	_	
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 3	-	CAN CIRC 5	-	CAN CINC 6	_	_
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2	-	_		_		_	CAN CINC 3
	CAN	CAN CIRC 1	CAN CINC 2	CAN CINC 4	CAN CINC 3				CAN CIRC 8	

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ENGINE	CAN COMM	CAN CIRC 1	_	CAN CIRC 2	CAN CIRC 3	_	CAN CIRC 6	CAN CIRC 5	_	CAN CINC 4
сут	CAN COMM	CAN CIRC 1	CAN CIRC 2	_	CAN CIRC 3	_	_	_	_	CAN CINC 4
ABS	CAN	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 CINC 3
ICC	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	CAN CIRC 3	_	_	_	CAN CINC 8	-
ase 10										
ENGINE	CAN COMM	CAN CIMC 1	-	CAN CVAC 2	CAN CNC 3	-	CAN CINC 6	CAN CINC 5	_	CAN CINC 4
СЛТ	CAN COMM	CAN CIRC 1	CAN CINC 2	-	CAN CIRC 3	-	_	-	-	CAN CIRC 4
ABS	CAN COMM	CAN CIRC 1	CAN CMC 2	CAN CIRC 3	-	CAN CIRC 5	_	CAN CIRC 6	-	-
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CINC 2	_	_	_	_	_	_	CAN CIRC 3
ICC	CAN COMM	CAN CIRC 1	CAN CINC 2	CAN CIRC 4	CAN CIRC 3	_	_	1	CAN CIRC 8	_
ENGINE	COMM	CIRC 1	-	CAN CINC 2	CIRC 3	_	CAN CIRC 6	CAN CIRC 5	_	CIRC 4
ase 11 ENGINE	CAN	CAN	_	CAN	CAN	_	CAN	CAN	_	CAN
СЛТ	CAN COMM	CAN CINC 1	CAN CINC 2	_	CAN CINC 3	-	_	_	_	CAN CINC 4
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIMC 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 CINC 4	CAN CIRC 3	_	_	-	CAN CIRC 8	-
ase 12										
ENGINE	CAN COMM	CAN CIRC 1	_	CAN CIRC 2	CAN CINC 3	_	CAN CIRC 6	CAN CIRC 5	_	CAN CIRC 4
сvт	CAN COMM	CAN CIRC 1	CAN CIRC 2	-	CAN CINC 3	-	-	_	-	CAN CIRC 4
ABS	CAN COMM	CAN CINC 1	CAN CINC 2	CAN CINC 3	-	CAN CINC 5	-	CAN CINC 6	_	_
SMART	CAN COMM	CAN CIRC 1	CAN CIRC 2	_	_	_	_	_	_	CAN CIRC 3
ENTRANCE	CAN	CAN	CAN	CAN	CAN CNC 3	_	_	-	CAN	_

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SMART ENTRANCE	COMM CAN COMM CAN COMM CAN COMM CAN COMM	CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1	CAN CIRC 2 CAN CIRC 2 CAN CIRC 2	CIRC 2 — CAN CIRC 3	CIRC 3 CAN CIRC 3		CIRC 6	CIRC 5		
ABS SMART ENTRANCE ICC	CAN COMM CAN COMM CAN	CAN CIRC 1 CAN CIRC 1 CAN	CAN CIRC 2 CAN			—	_	_		CIRC 4 CAN CIRC 4
	CAN COMM CAN	CAN CIRC 1 CAN	CAN		-	CAN CINC 5	_	CAN CIRC 6	_	- UNO -
				_	_	_		_	_	CAN CIRC 3
ase 14			CAN CIRC 2	CAN CIRC 4	CAN CIRC 3	_	_	_	CAN CIRC 8	_
ase 14										
ENGINE	CAN COMM	CAN CIRC 1	_	CAN CIRC 2	CAN CIRC 3	_	CAN CINC 6	CAN CIRC 5	_	CAN CIRC 4
СVТ	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 CINC 1	CAN CINC 2	_	_	_	_	_	_	CAN CINC 3
ICC	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	CAN CIRC 3	_	_	_	CAN CIRC 8	_
	COMM	CAN CIRC 1	CAN CIRC 2	_	CIRC 3 CAN CIRC 3	_	CIRC 6	CAN CIMC 5 —		CAN
ABS	CAN	CIRC 1 CAN	CIRC 2 CAN	- CAN	CAN	CAN		_	_	CIRC 4 CAN CIRC 4
SMART		CIRC 1	CIRC 2	– CAN CIRC 3 –	CAN		_ _ _	CINIC 5 — CAN CINIC 6 —		CAN CIRC 4
ABS SMART ENTRANCE	CAN COMM CAN	CIRC 1 CAN CIRC 1 CAN	CIRC 2 CAN CIRC 2 CAN		CAN	CAN		_		CAN CIRC 4 — CAN
SMART ENTRANCE ICC ase 16	CAN COMM CAN COMM CAN	CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1	CIRC 2 CAN CIRC 2 CAN CIRC 2 CAN		CAN CIRC 3 —	CAN		_		CAN CIRC 4 — CAN
SMART ENTRANCE ICC ase 16 ENGINE	CAN COMM CAN COMM CAN COMM	CIRC 1 CAN CIRC 1 CAN CIRC 1	CIRC 2 CAN CIRC 2 CAN CIRC 2 CAN CIRC 2 CAN CIRC 2	CIRC 3 CAN CINC 4	CAN CIRC 3 - CAN CINC 3 - CAN CINC 3 CAN CIRC 3 CAN	CAN		CAN CINC 6 - - CAN CIRC 5	 CAN CINC 8	CAN CIRC / CAN CIRC (- CAN CIRC / CAN CIRC / CAN
SMART ENTRANCE ICC	CAN COMM CAN CAN COMM CAN CAN CAN CAN CAN	CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN	CIRC 2 CAN CIRC 2 CAN CIRC 2 CAN CIRC 2 CAN CAN CIRC 2 CAN CIRC 2 CAN	CIRC 3 CAN CINC 4 CAN CIRC 2 - CAN	CAN CIRC 3 - CAN CAN CINC 3 CAN CAN CIRC 3	CAN CIRC 5 — — — — — — — — — — — — — —	- - - 	CAN CINC 6 - - CAN CIRC 5 - CAN CIRC 5		CAN CIRC / CAN CIRC (- CAN CIRC / CAN CIRC / CAN
SMART ENTRANCE ICC ase 16 ENGINE CVT	CAN COMM CAN COMM CAN COMM CAN CAN CAN CAN	CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1	CIRC 2 CAN CIRC 2 CAN CIRC 2 CAN CIRC 2 CAN CAN CIRC 2	CIRC 3 — CAN CINC 4 CAN CIRC 2 —	CAN CIRC 3 - CAN CINC 3 - CAN CINC 3 CAN CIRC 3 CAN	CAN CIRC 5 — — — — — — —		CAN CINC 6 - - CAN CIRC 5 -		CAN CIRC - CAN CIRC : - CAN CIRC -

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ENGINE	CAN COMM	CAN CIRC 1	-	CAN CIRC 2	CAN CIRC 3	_	CAN CIRC 6	CAN CIRC 5	-	CAN CINC 4
сут	CAN COMM	CAN CIRC 1	CAN CIRC 2	_	CAN CIRC 3	_	_	_	-	CAN CINC 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 CINC 3
ICC	CAN	CAN	CAN	CAN	CAN	_			CAN	_
 se 18	COMM CAN COMM			CIRC 4	CIRC 3		CAN CINC 6			CAN CINC 4
se 18 ENGINE	CAN COMM CAN	CAN CMC 1		CIRC 4	CAN CINC 3		CAN CINC 6	CAN CINC 5	CIRC 8	CAN CINC 4 CAN
se 18 ENGINE	CAN COMM	CAN CINC 1 CAN CINC 1		CAM CINC 2 —			CAN CINC 6 -	-		CAN CINC 4 CAN CINC 4 -
se 18 ENGINE CVT	CAN COMM CAN COMM CAN	CAN CMC 1			CAN CNIC 3 CAN CNIC 3	- - - CAN CMC 5 -	_	CAN CINC 5 — CAN CINC 6 —		

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 <u>LAN-168, "Circuit Check Between</u> <u>TCM and Data Link Connector"</u>

Case 7:Check Harness between Data link connector and Smart entrance control unit. Refer to <u>LAN-169</u>, "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 <u>LAN-169</u>, "Circuit Check <u>Between Smart Entrance Control Unit and ICC Unit</u>"

Case 9:Check Harness between ICC unit and ICC sensor. Refer to <u>LAN-170, "Circuit Check Between ICC Unit</u> 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 <u>LAN-172, "ESP/TCS/ABS Control Unit Circuit</u> <u>Check"</u>

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 <u>LAN-173</u>, "Smart Entrance Control Unit Circuit <u>Check"</u>

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"

LAN-167

LAN

Circuit Check Between TCM and Data Link Connector

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

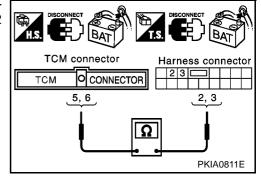
- 1. Disconnect TCM connector and harness connector F108.
- Check continuity between TCM harness connector F103 terminals 5 (L), 6 (R) and harness connector F108 terminals 3 (L), 2 (R).
 - 5(L) 3(L)
 - 6(R) 2(R)

: Continuity should exist.

: 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).

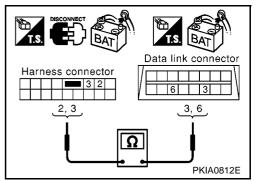
- 3(L) 6(L)
- : Continuity should exist.

: Continuity should exist.

- 2(R) 3(R)
- OK or NG

NG

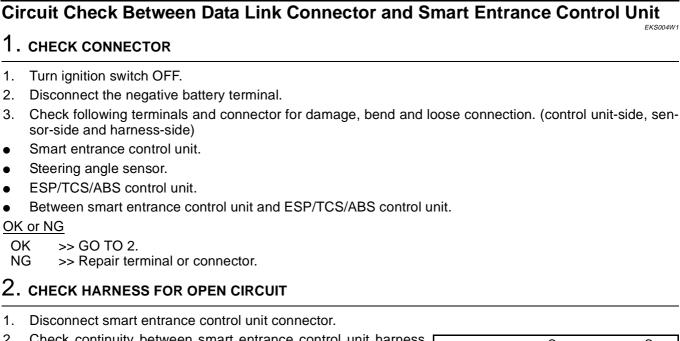
OK >> Reconnect all connectors to perform "SELF-DIAG RESULTS" and "DATA MONITOR" for "ENGINE", "CVT", "ABS", "SMART ENTRANCE", and "ICC" displayed on CONSULT-II. Refer to <u>EC-1083</u>, "<u>DTC U1000</u>, <u>U1001 CAN COMMUNICATION LINE"</u> (WITH EURO-OBD) or <u>EC-1505</u>, "<u>DTC U1000</u>, U1001 CAN COMMU-



<u>NICATION LINE</u>" (WITHOUT EURO-OBD) for "ENGINE" and Refer to <u>CVT-118</u>, "DTC U1000 <u>CAN COMMUNICATION LINE</u>" (EURO-OBD) or <u>CVT-201</u>, "CAN COMMUNICATION LINE" (ALL) for "CVT". Refer to <u>BRC-107</u>, "Inspection 15 CAN Communication Circuit, ESP/TCS/ABS <u>Control Unit and Steering Angle Sensor</u>" for "ABS". Refer to <u>BCS-40</u>, "CAN Communication Line <u>Check</u>" for "SMART ENTRANCE". Refer to <u>ACS-46</u>, "DTC 20 CAN COMM CIRCUIT" for "ICC". >> Repair harness.

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[CAN]



- 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

1.

2.

3.

OK

NG

1.

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".

Smart entrance control

8, 11

unit connector

NG >> Repair harness.

Circuit Check Between Smart Entrance Control Unit and ICC Unit

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Data link connector

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PKIA0813E

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- 1. CHECK CONNECTOR
- Turn ignition switch OFF. 1.
- Disconnect the negative battery terminal. 2.
- Check following terminals and connector for damage, bend and loose connection. (control unit-side, sen-3. sor-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.

EKS004WE

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)

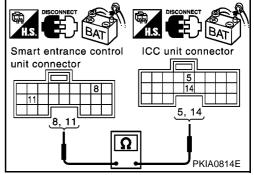
: Continuity should exist.

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



(WITHOUT EURO-OBD) or EC-1505, "DTC U1000, U1001 CAN COMMUNICATION LINE" 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

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.

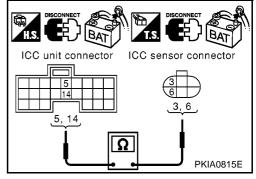
2. CHECK HARNESS FOR OPEN CIRCUIT

- Disconnect ICC unit connector and ICC sensor connector. 1.
- 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)5(R) - 6(R)

: Continuity should exist. : 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-

[CAN]

sor for "ABS". Refer to <u>BCS-40, "CAN Communication</u> Refer to ACS-46, "DTC 20 CAN COMM CIRCUIT" for "IC	
NG $>>$ Repair harness.	,C . A
ECM Circuit Check 1. CHECK CONNECTOR	eksoo4w2 B
 Turn ignition switch OFF. Disconnect the negative battery terminal. Check terminals and connector of ECM for damage, bend and loo harness-side) OK or NG OK >> GO TO 2. NG >> Repair terminal or connector. CHECK HARNESS FOR OPEN CIRCUIT 	C se connection. (control module-side and D
 Disconnect ECM connector. 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. 	F ECM connector ECM CONNECTOR 86 94 FKIA0816E
TCM Circuit Check 1. CHECK CONNECTOR	EKS004W3 J
 Turn ignition switch OFF. Disconnect the negative battery terminal. Check terminals and connector of TCM for damage, bend and loo harness-side) OK or NG OK >> GO TO 2. NG >> Repair terminal or connector. 	L
2. CHECK HARNESS FOR OPEN CIRCUIT	M
 Disconnect TCM connector. 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. 	TCM CONNECTOR 5 6 FKIA0817E

ESP/TCS/ABS Control Unit Circuit Check

1. CHECK CONNECTOR

- 1. Turn ignition switch OFF.
- 2. Disconnect the negative battery terminal.
- 3. Check following terminals and connector for damage, bend and loose connection. (control 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

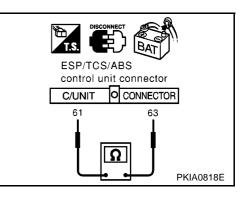
- 1. Disconnect ESP/TCS/ABS control unit connector.
- 2. Check resistance between ESP/TCS/ABS control unit harness connector B109 terminals 61(L) and 63(R).

61(L) - 63(R)

: **Approx. 54 – 66**Ω

OK or NG

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



EKS004W5

Steering Angle Sensor Circuit Check

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. (sensorside and harness-side)

OK or NG

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

2. CHECK HARNESS FOR OPEN CIRCUIT

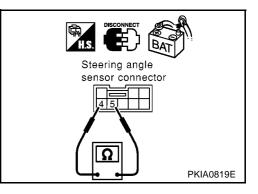
- 1. Disconnect steering angle sensor connector.
- Check resistance between steering angle sensor harness connector M33 terminals 4(L) and 5(R).

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.



CAN STSTEM (TTPE 7)	[CAN]
Smart Entrance Control Unit Circuit Check 1. CHECK CONNECTOR	EKS004W6
 Turn ignition switch OFF. Disconnect the negative battery terminal. Check terminals and connector of smart entrance control unit for damage, bend and l tion.(control unit-side and harness-side) <u>OK or NG</u> OK >> GO TO 2. NG >> Repair terminal or connector. 	loose connec-
2. CHECK HARNESS FOR OPEN CIRCUIT	
 Disconnect smart entrance control unit connector. 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. 	introl
ICC Unit Circuit Check	PKIA0820E EKS004WF
 Turn ignition switch OFF. Disconnect the negative battery terminal. Check following terminals and connector for damage, bend and loose connection. (contro harness-side) ICC unit. Harness connector B5. Harness connector M23. OK or NG OK >> GO TO 2. NG >> Repair terminal or connector. 	I unit-side and
2. CHECK HARNESS FOR OPEN CIRCUIT	
 Disconnect ICC unit connector. 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 or NG OK >> Replace ICC unit. NG >> Repair harness between ICC unit and smart entrance control unit. 	tor

ICC Sensor Circuit Check

1. CHECK CONNECTOR

- 1. Turn ignition switch OFF.
- 2. Disconnect the negative battery terminal.
- 3. Check following terminals and connector for damage, bend and loose connection. (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.

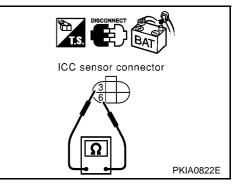
2. CHECK HARNESS FOR OPEN CIRCUIT

- 1. Disconnect ICC sensor connector.
- 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.



EKS004W7

Combination Meter Circuit Check

1. CHECK CONNECTOR

- 1. Turn ignition switch OFF.
- 2. Disconnect the negative battery terminal.
- 3. Check terminals and connector of combination meter for damage, 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

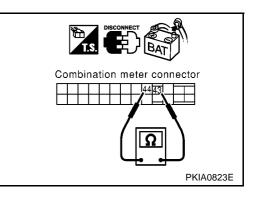
- 1. Disconnect combination meter connector.
- Check resistance between combination meter harness connector M37 terminals 43(L) and 44(R).

43(L) – 44(R)

: Approx. 108 – 132Ω

OK or NG

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



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PKIA0824E

		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, se side, control unit-side, control module-side and harness-side)	ensor-
•	Combination meter.	
	ICC sensor.	
Ð	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.	
ϽK	Cor NG	
	K >> GO TO 2.	
Ν	G >> Repair terminal or connector.	
2.	CHECK HARNESS FOR SHORT CIRCUIT	
۱.	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.	
<u>DK</u>	Cor NG	
	K >> GO TO 3.	
Ν		
	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.

PKIA0825E

3. CHECK HARNESS FOR SHORT CIRCUIT

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

- 6(L) ground
- 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.

CAN SYSTEM (TYPE 7)

- 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

5. CHECK HARNESS FOR SHORT CIRCUIT

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

: Continuity should not exist.

: Continuity should not exist.

: Continuity should not exist.

OK or NG

OK or NG OK

NG

OK >> GO TO 5.

nals 3 (L), 6 (R) and ground. 3(L) – ground

6(R) – ground

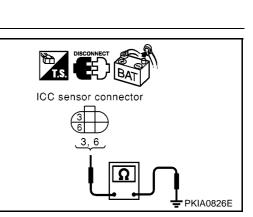
>> GO TO 6.

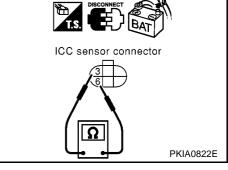
nector E124.

NG >> Repair harness between ICC sensor and harness connector E124.

Check continuity between ICC sensor harness connector E53 termi-

>> Repair harness between ICC sensor and harness con-





Data link connec

6 3

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: Continuity should not exist.

6. CHECK HARNESS FOR SHORT CIRCUIT

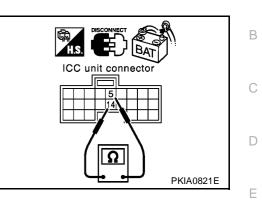
- 1. Disconnect ICC unit connector.
- 2. Check continuity between ICC unit harness connector B9 terminals 14 (L) and 5(R).

14(L) - 5(R)

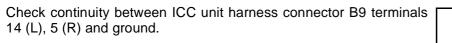
: Continuity should not exist.

OK or NG

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



7. CHECK HARNESS FOR SHORT CIRCUIT



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

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

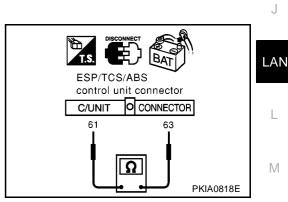
: Continuity should not exist.

OK or NG

OK >> GO TO 9.

61(L) - 63(R)

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.

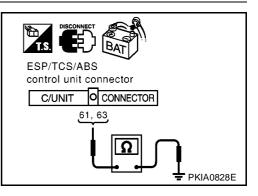
61(L) – ground

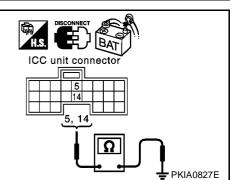
- : Continuity should not exist.
- 63(R) ground

: Continuity should not exist.

OK or NG

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





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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 : Continu
- 86(R) ground
- : Continuity should not exist.
- und : Continuity should not exist.

OK or NG

- OK >> GO TO 12. NG >> ● Repair ha
 - 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 <u>LAN-178</u>, "ECM / COMBINATION METER INTERNAL CIRCUIT INSPECTION"

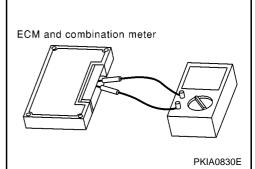
OK or NG

- 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 <u>EC-1083, "DTC U1000, U1001 CAN COMMUNICATION LINE"</u> (WITH EURO-OBD) or <u>EC-1505,</u> "DTC U1000, U1001 CAN COMMUNICATION LINE" (WITHOUT EURO-OBD) for "ENGINE" and Refer to <u>CVT-118, "DTC U1000 CAN COMMUNICATION LINE"</u> (EURO-OBD) or <u>CVT-201, "CAN COMMUNICATION LINE"</u> (ALL) for "CVT". Refer to <u>BRC-107, "Inspection 15 CAN Communication Circuit, ESP/TCS/ABS Control Unit and Steering Angle Sensor" for "ABS". Refer to <u>BCS-40, "CAN Communication Line Check"</u> for "SMART ENTRANCE". Refer to <u>ACS-46, "DTC 20 CAN COMM CIRCUIT"</u> for "ICC".</u>
- NG >> Replace ECM and/or Combination meter.

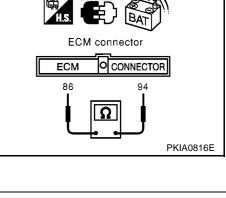
Component Inspection ECM / COMBINATION METER INTERNAL CIRCUIT INSPECTION

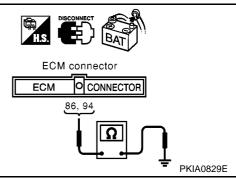
- Remove ECM and Combination meter from vehicle.
- Check resistance between ECM terminals 94 and 86.
- Check resistance between Combination meter terminals 43 and 44.

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



EKS004W9

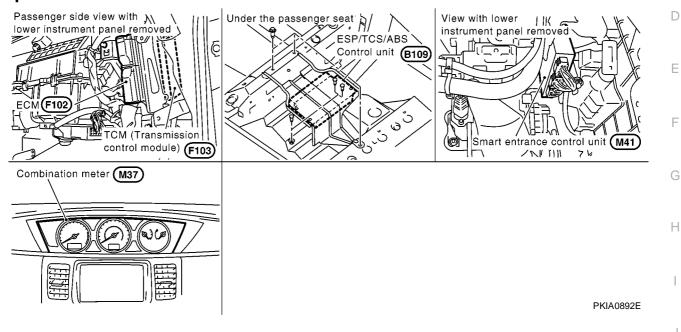




System Description

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

Component Parts and Harness Connector Location



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PFP:23710

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EKS004VD

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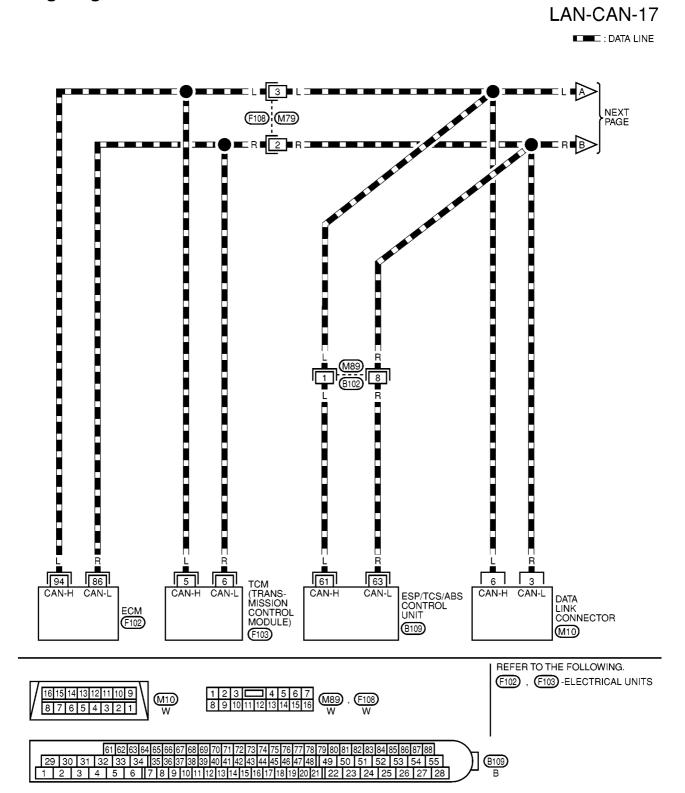
В

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EKS004VE

Wiring Diagram — CAN —



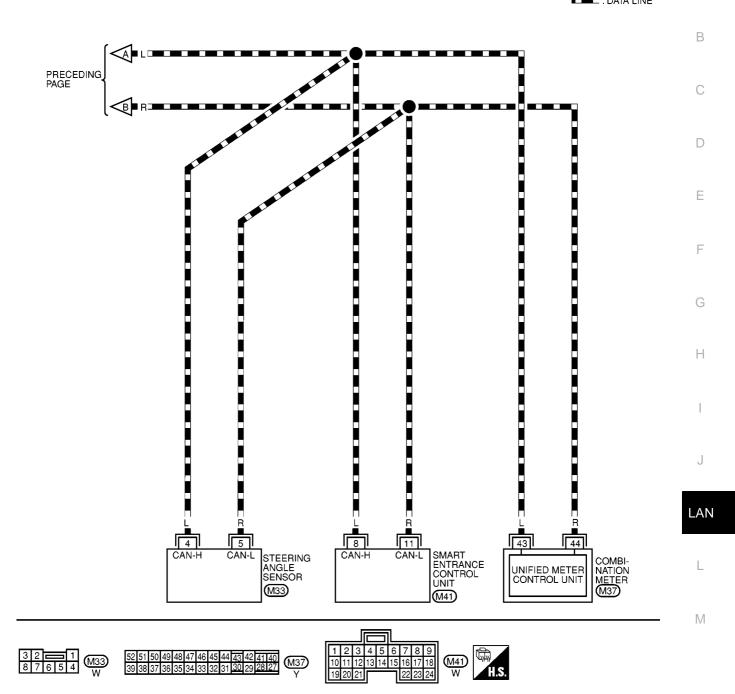
MKWA0367E





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MKWA0368E

Work Flow

- EKS004VF
- Print all the data of "SELF-DIAG RESULTS" and "DATA MONITOR" for "ENGINE", "CVT", "ABS", and "SMART ENTRANCE" displayed on CONSULT-II. Refer to <u>EC-1083</u>, "<u>DTC U1000</u>, <u>U1001</u> <u>CAN COMMU-NICATION LINE</u>" (WITH EURO-OBD) or <u>EC-1505</u>, "<u>DTC U1000</u>, <u>U1001</u> <u>CAN COMMUNICATION LINE</u>" (WITHOUT EURO-OBD) for "ENGINE" and Refer to <u>CVT-118</u>, "<u>DTC U1000</u> <u>CAN COMMUNICATION LINE</u>" (EURO-OBD) or <u>CVT-201</u>, "<u>CAN COMMUNICATION LINE</u>" (ALL) for "CVT". Refer to <u>BRC-107</u>, "<u>Inspection 15</u> <u>CAN Communication Circuit, ESP/TCS/ABS Control Unit and Steering Angle Sensor</u>" for "ABS". Refer to <u>BCS-40</u>, "<u>CAN Communication Line Check</u>" 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"
- Based on the data monitor results, put "v" marks onto the items with "UNKWN" or "NG" in the check sheet table. Refer to <u>LAN-183, "CHECK SHEET"</u>

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 <u>LAN-184, "CHECK SHEET</u> <u>RESULTS (EXAMPLE)"</u>

CAN SYSTEM (TYPE 8)

CHECK SHEET

NGINE	CAN COMM	CAN CIRC 1	-	CAN CIRC 2		_	CAN CIRC 6	
/T 3S	CAN COMM CAN COMM	CAN CIRC 1 CAN CIRC 1	CAN CIRC 2 CAN CIRC 2	– CAN CIRC 3	CAN CIRC 3	– CAN CIRC 5	_	CAN CIRC 4
MART							-	
NTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2	_	-	-	-	CAN CIRC 3
nptoms:								
Attach cop ENGINE SELF-DIAG R	Ξ	c	n copy of SVT IG RESULTS	SE	Attach copy of ABS LF-DIAG RESU	LTS	Attach c SMART EN SELF-DIAG	TRANCE
Attach cop ENGINE DATA MON	E	c	a copy of SVT MONITOR		Attach copy of ABS DATA MONITO	R	Attach o SMART EN DATA MC	TRANCE

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CHECK SHEET RESULTS (EXAMPLE)

ENGINE	CANCOMM	CAN CIRC 1	_	CAN CIRC 2	CAN CIRC 3	_	CAN CIRC 6	CAN CIRC 4
СЛТ	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	_	CANORC 2	CANORC 3	_	CAN CRC 6	CANORC 4
OUT		CAN CIPC 1		1	CAN CIPC 2		· · · · · ·	CAN CIPC 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	_	CANORC 2	CAN CIRC 3	_	CAN CIRC 6	CAN CIRC 4
CVT		CAN CIRC 1	CAN CIRC 2	1	CAN CIRC 3	-	-	CAN CIRC 4
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	CANORC 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	-	CANORC 3	1	-	CAN CRC 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	-	_	-	1	CAN CIRC 3

Case 3: Replace ESP/TCS/ABS control unit

ENGINE	CAN COMM	CAN CIRC 1	_	CAN CIRC 2	CANVIRC 3	_	CAN CIRC 6	CAN CIRC 4
CVT	CAN COMM	CAN CIRC 1	CAN CIRC 2	-	CAN CRC 3	—	-	CAN CIRC 4
ABS		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	CANORC 3	_	CANORC 5	—	-
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2	-	_	_	_	CAN CIRC 3

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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	CANCOMM	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	CANORC 2	-	_	_	_	CAN CRC 3

PKIA0738E

LAN-184

CAN SYSTEM (TYPE 8)

BMART ENTRANCE Ise 6 ENGINE CVT	CAN COMM CAN COMM CAN COMM CAN COMM	CAN CIRC 1 CAN CIRC 1		CAN CIRC 2	CANORC 3	—	CANORC 6	CANORC 4
ABS SMART ENTRANCE ase 6 ENGINE CVT ABS	CAN COMM		CAN CIRC 2	_	CANOIRC 3	_	<u> </u>	CANVIRC 4
ENTRANCE	CAN COMM	CAN CIRC 1	CANOIRC 2	CANORC 3	_	CAN CIRC 5	_	_
ENGINE CVT		CAN CIRC 1	CANORC 2	_	_	—	_	CAN CIRC 3
ENGINE CVT								
CVT			1					
	CAN COMM	CAN CIRC 1		CAN CIRC 2			CAN CIRC 6	CANCERC 4
ABS	CAN COMM CAN COMM	CAN CIRC 1			CAN CIRC 3		_	CAN RC 4
SMART		CAN CIRC 1		CAN CIRC 3		CAN ORC 5		
ENTRANCE	CAN COMM	CAN CIRC 1	CANORC 2	_	_	_	_	CAN CIRC 3
ase 7				-	A		A	· · · · ·
ENGINE	CAN COMM			CANORC 2	CANOIRC 3	_	CAN CRC 6	
CVT	CAN COMM	CAN CIRC 1	CANORC 2	_	CAN CIRC 3	_	_	CAN CIRC 4
ABS	CAN COMM	CAN CIRC 1	CANORC 2	CAN CIRC 3	-	CAN CIRC 5	_	
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CANVIRC 2	-	—	—	-	CAN CIRC 3
ase 8								
ENGINE	CAN COMM	CAN CIRC 1		CANORC 2	CAN CIRC 3	-	CAN CIRC 6	
	CAN COMM	CANORC 1			CAN CRC 3	-		CANORC 4
ABS SMART	CAN COMM	CAN CIRC 1	CAN CIRC 2	CANORC 3	_	CAN CIRC 5		
ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2	_	_	_	_	CAN CIRC 3
ase 9 ENGINE		CAN CIRC 1		CAN CIRC 2	CAN CARC 3		CAN CIRC 6	CAN CIRC 4
CVT	CAN COMM	CAN CIRC 1		_	CAN CRC 3	-	-	CAN CIRC 4
ABS	CAN COMM	CANORC 1	CANORC 2	CANORC 3	_	CAN CRC 5	_	-
SMART	CAN COMM	CAN CIRC 1		_	_	_	_	CAN CIRC 3
ENTRANCE								
ENTRANCE	CAN COMM	CAN CIRC 1	_	CAN CIRC 2	CAN CIRC 3	_	CAN CIRC 6	CAN CIRC 4
ase 10 ENGINE CVT	CAN COMM	CAN CIRC 1	CAN CIRC 2	—	CAN CIRC 3 CAN CIRC 3	_	CAN CIRC 6	
use 10 ENGINE				CAN CIRC 2 — CAN CIRC 3		– – CAN VRC 5	CAN CIRC 6 — —	CAN CIRC 4 CAN CIRC 4 —

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CAN SYSTEM (TYPE 8)

PKIA0740E

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	—	—	CANVIRC 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
ase 13		······	·	·				· · · · · · · · · · · · · · · · · · ·
		CANNOTRC 1		CAN ORC 2	CANNO RC 3		CAN OR 6	
ase 13	CAN COMM CAN COMM	CANOTRC 1 CANOTRC 1	– CAN V RC 2	CANVARC 2	CANVARC 3 CANVARC 3		CAN O RC 6	
ase 13 ENGINE			CANY RC 2	CANORC 2 CANORC 3			CAN CARC 6	

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 <u>LAN-186, "Circuit Check Between</u> <u>TCM and Data Link Connector"</u>

Case 6:Check Harness between Data link connector and Smart entrance control unit. Refer to <u>LAN-187, "Circuit Check Between Data Link Connector and Smart Entrance Control Unit"</u>

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 <u>LAN-190</u>, "Steering Angle Sensor Circuit Check" Case 11:Check Smart entrance control unit Circuit. Refer to <u>LAN-190</u>, "Smart Entrance Control Unit Circuit <u>Check"</u>

Case 12:Check Combination meter Circuit. Refer to <u>LAN-191, "Combination Meter Circuit Check"</u> Case 13:Check CAN communication Circuit. Refer to <u>LAN-191, "CAN Communication Circuit Check"</u>

Circuit Check Between TCM and Data Link Connector 1. CHECK CONNECTOR

EKS004VS

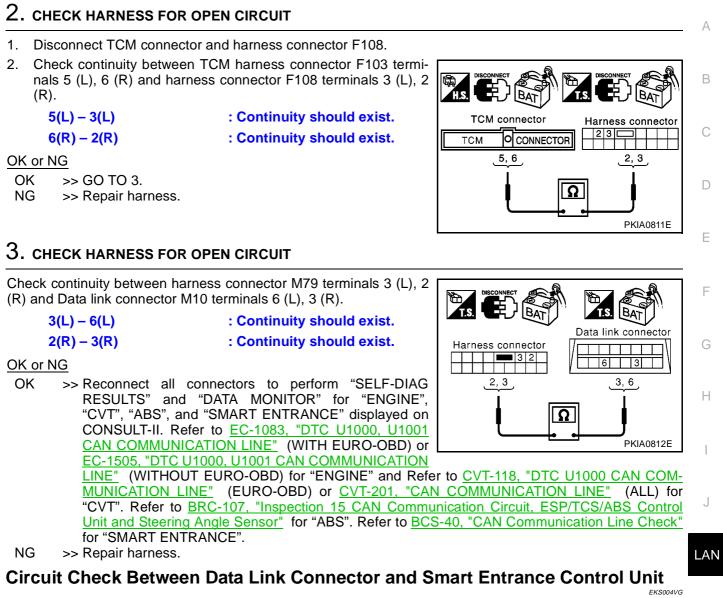
- 1. Turn ignition switch OFF.
- 2. Disconnect the negative battery terminal.
- 3. Check following terminals and connector for damage, bend and loose connection. (control module-side, control unit-side and harness-side)
- TCM.
- ESP/TCS/ABS control unit.
- Between TCM and ESP/TCS/ABS control unit.

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

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

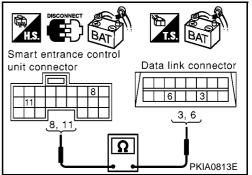
- 1. Disconnect smart entrance control unit connector.
- 2. Check continuity between smart entrance control unit harness connector M41 terminals 8 (L), 11 (R) and Data link connector M10 terminals 6 (L), 3 (R).
 - 8(L) 6(L)11(R) - 3(R)

: Continuity should exist.

: 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 <u>EC-1083</u>, "DTC U1000, U1001 <u>CAN COMMUNICATION LINE"</u> (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 <u>BRC-107</u>, "Inspection 15 CAN Communication Circuit, ESP/TCS/ABS Control Unit and Steering Angle Sensor" for "ABS". Refer to <u>BCS-40</u>, "CAN Communication Line Check" for "SMART ENTRANCE".

NG >> Repair harness.

ECM Circuit Check

1. CHECK CONNECTOR

EKS004VH

- 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.

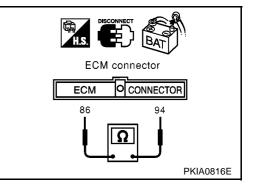
2. CHECK HARNESS FOR OPEN CIRCUIT

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

94(L) - 86(R)

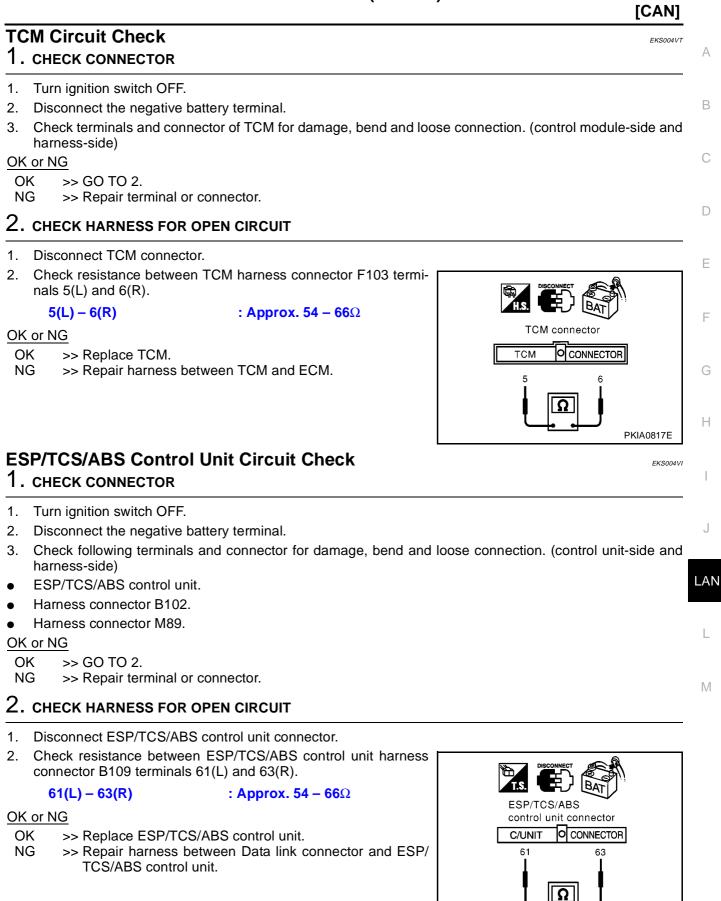
: Approx. 108 – 132Ω

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



CAN SYSTEM (TYPE 8)

PKIA0818E



Steering Angle Sensor Circuit Check

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. (sensorside and harness-side)

OK or NG

OK >> GO TO 2.

NG >> Repair terminal or connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

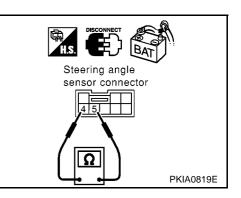
- 1. Disconnect steering angle sensor connector.
- Check resistance between steering angle sensor harness connector M33 terminals 4(L) and 5(R).

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

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.

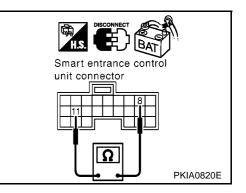
2. CHECK HARNESS FOR OPEN CIRCUIT

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

: Approx. 54 – 66Ω

OK or NG

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



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CAN SYSTEM (TYPE 8)

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- Steering angle sensor.
- ESP/TCS/ABS control unit.
- TCM.
- ECM.
- Between ESP/TCS/ABS control unit and ECM.

- 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.
- 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 3(R) – ground

: Continuity should not exist.

: Continuity should not exist.

OK or NG

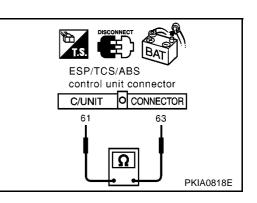
- OK >> GO TO 4. NG
 - >> Repair harness between smart entrance control unit and combination meter.
 - Repair harness between smart entrance control unit and steering angle sensor.
 - Repair harness between Data link connector and steering angle sensor.
 - Repair harness between harness connector M89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

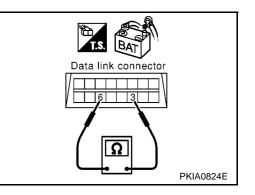
4. CHECK HARNESS FOR SHORT CIRCUIT

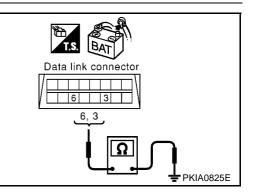
- Disconnect ESP/TCS/ABS control unit connector. 1.
- Check continuity between ESP/TCS/ABS control unit harness 2. connector B109 terminals 61 (L) and 63(R).

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

- 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
- 63(R) ground

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

: 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).

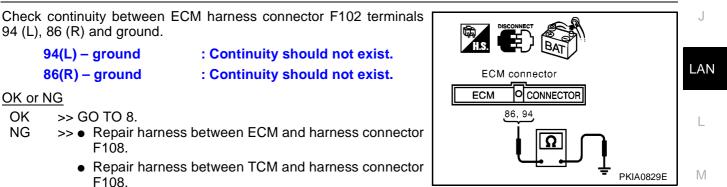
94(L) – 86(R)

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

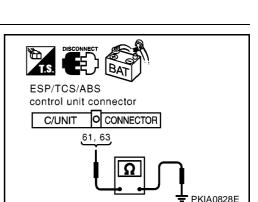


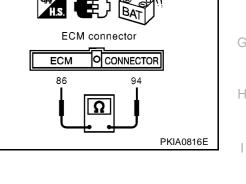
8. ECM / COMBINATION METER INTERNAL CIRCUIT INSPECTION

Check components inspection. Refer to <u>LAN-194</u>, "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.





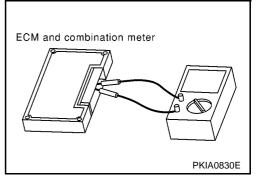
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Component Inspection ECM / COMBINATION METER INTERNAL CIRCUIT INSPECTION

- 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	Applox. 100 - 102

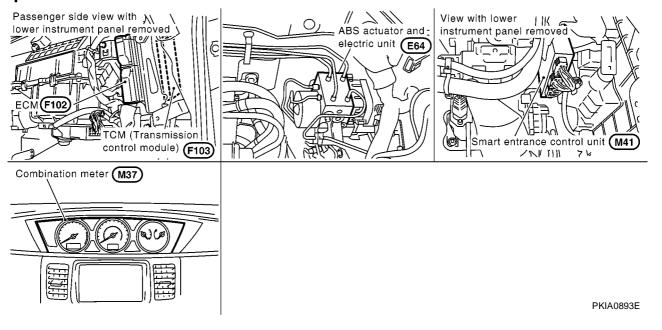


CAN SYSTEM (TYPE 9)

System Description

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

Component Parts and Harness Connector Location



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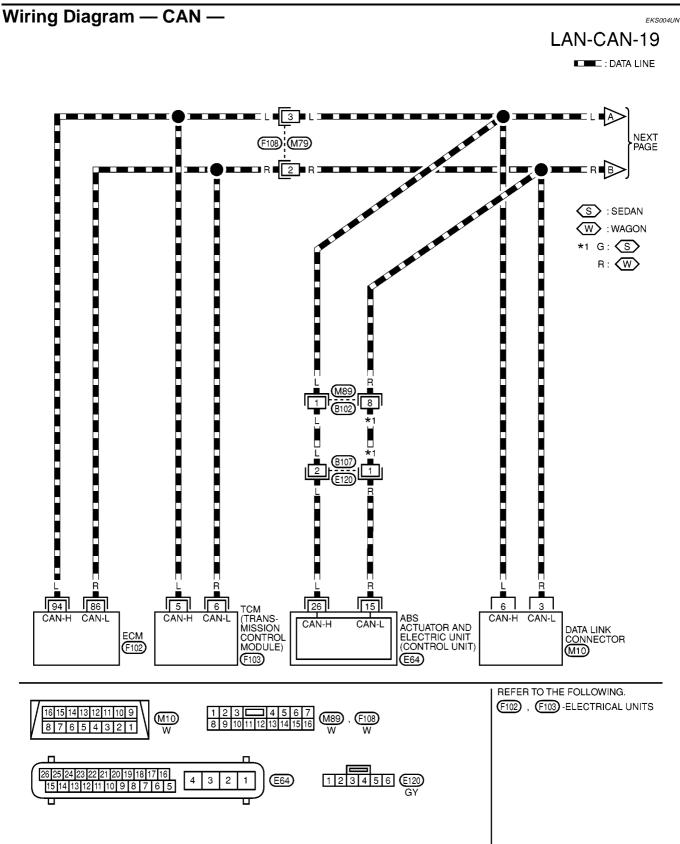
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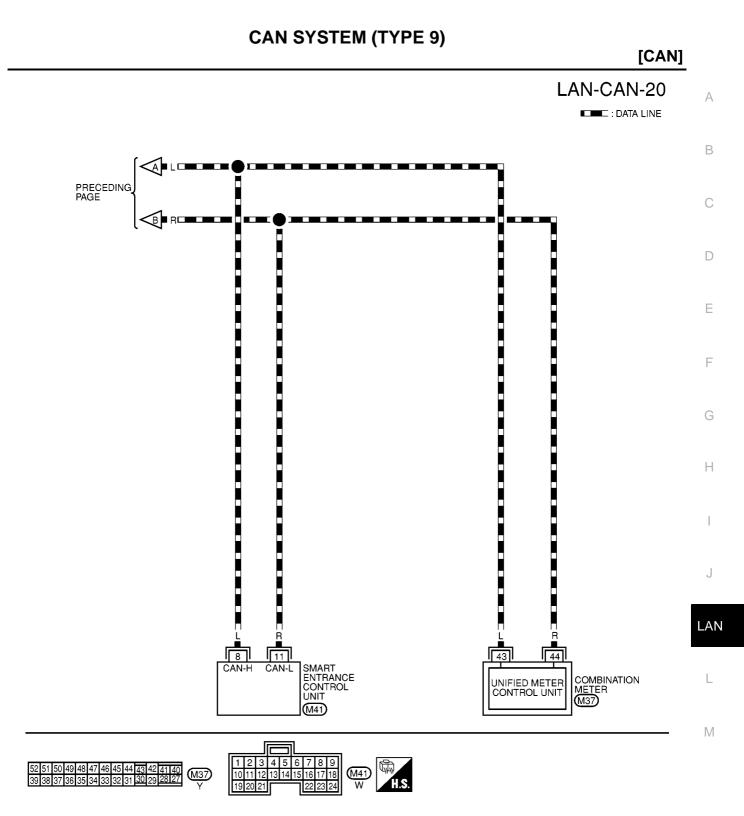
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Work Flow

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- Print all the data of "SELF-DIAG RESULTS" and "DATA MONITOR" for "ENGINE", "CVT", "ABS", and "SMART ENTRANCE" displayed on CONSULT-II. Refer to <u>EC-1083</u>, "DTC U1000, U1001 CAN COMMU-<u>NICATION LINE</u>" (WITH EURO-OBD) or <u>EC-1505</u>, "DTC U1000, U1001 CAN COMMUNICATION LINE" (WITHOUT EURO-OBD) for "ENGINE" and Refer to <u>CVT-118</u>, "DTC U1000 CAN COMMUNICATION <u>LINE</u>" (EURO-OBD) or <u>CVT-201</u>, "CAN COMMUNICATION LINE" (ALL) for "CVT". Refer to <u>BRC-33</u>, "CAN Communication Circuit" for "ABS". Refer to <u>BCS-40</u>, "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"
- Based on the data monitor results, put "v" marks onto the items with "UNKWN" or "NG" in the check sheet table. Refer to <u>LAN-199, "CHECK SHEET"</u>

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 <u>LAN-200, "CHECK SHEET</u> <u>RESULTS (EXAMPLE)"</u>

CAN SYSTEM (TYPE 9)

CHECK SHEET

Check sheet table

RT ENTRANCE	CAN COMM CAN COMM CAN COMM	CAN CIRC 1 CAN CIRC 1 CAN CIRC 1	CAN CIRC 2 CAN CIRC 2	_	CAN CIRC 3		CAN CIRC 4
					-	-	_
oms:		UAN UNU T	CAN CIRC 2	_	-	_	CAN CIRC 3
Attach copy of		Attach copy	of	Attach co			copy of
ENGINE ELF-DIAG RESUL	TS	CVT SELF-DIAG RE	SULTS	ABS SELF-DIAG F			INTRANCE GRESULTS
Attach copy of ENGINE		Attach copy CVT	of	Attach co ABS			copy of NTRANCE
DATA MONITOF	а 📗		FOR	DATA MO			IONITOR

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CHECK SHEET RESULTS (EXAMPLE)

	CANCOMM	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 CRC 2		CAN CARC 6	CANORC 4
ENGINE CVT	CAN COMM CAN COMM	CAN CIRC 1	CAN CIRC 2		CAN CIRC 3		CAN CIRC 4
ABS	CAN COMM CAN COMM	CAN CIRC 1 CAN CIRC 1	CAN CIRC 2 CAN CIRC 2				
ABS SMART ENTRANCE	CAN COMM CAN COMM	CAN CIRC 1	CAN CIRC 2 CAN CIRC 2				CAN CIRC 3
					ı		
ase 2: Replace TCM							
ENGINE	CAN COMM	CAN CIRC 1	- 1	CANORC 2	_	CAN CIRC 6	CAN CIRC 4
CVT	CANCOMM	CAN CIRC 1	CAN CIRC 2	_	CAN CIRC 3	_	CAN CIRC 4
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	—	_	_	_
MART 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
	CAN COMM	CAN CIRC 1	CANORC 2	-	CANORC 3	–	CANORC 4
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	_	-		- UAI -
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2	_	_	_	CAN CIRC 3
	OAN COMM						
ENGINE CVT ABS SMART ENTRANCE	CAN COMM CAN COMM CAN COMM CAN COMM	CAN CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1	- CAN CIRC 2 CAN CIRC 2 CAN CIRC 2	CAN CIRC 2 — — —	CANVIRC 3	CAN CIRC 6 — — —	CAN CIRC 4 CAN CIRC 4 — CAN CIRC 3
			1				
ENGINE	CAN COMM	CAN CIRC 1	_	CAN CIRC 2	_	CAN CIRC 6	CAN CIRC 4
	CAN COMM CAN COMM	CAN CIRC 1 CAN CIRC 1	– CAN CIRC 2	CAN CIRC 2	– CAN CIRC 3	CAN CIRC 6	
CVT ABS	CAN COMM CAN COMM	CAN CIRC 1 CAN CIRC 1	CANCIRC 2	CAN CIRC 2 — —	– CAN CIRC 3 –	CAN CIRC 6 — —	CAN CIRC 4
CVT ABS	CAN COMM	CAN CIRC 1		_	– CAN CIRC 3 – –	CAN CIRC 6 — — —	CAN CIRC 4
CVT ABS SMART ENTRANCE	CAN COMM CAN COMM CAN COMM	CAN CIRC 1 CAN CIRC 1 CAN CIRC 1	CANCIRC 2	_ _	– CAN CIRC 3 – –	CAN CIRC 6 — — — —	CAN CIRC 4
CVT ABS SMART ENTRANCE SMART ENTRANCE	CAN COMM CAN COMM CAN COMM	CAN CIRC 1 CAN CIRC 1 CAN CIRC 1	CAN CIRC 2 CAN CIRC 2	_ _	– CAN CIRC 3 – –	CAN CIRC 6 	CAN CIRC 4 — CAN CIRC 3
CVT ABS SMART ENTRANCE see 4: Replace Smart e ENGINE	CAN COMM CAN COMM CAN COMM ntrance control un CAN COMM CAN COMM	CAN CIRC 1 CAN CIRC 1 CAN CIRC 1	CAN CIRC 2 CAN CIRC 2			- - -	CAN CIRC 4
CVT ABS SMART ENTRANCE 	CAN COMM CAN COMM CAN COMM ntrance control un CAN COMM CAN COMM CAN COMM	CAN CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1	CAN CIRC 2 CAN CIRC 2			- - -	CAN CIRC 4
CVT ABS SMART ENTRANCE SMART ENTRANC	CAN COMM CAN COMM CAN COMM ntrance control un CAN COMM CAN COMM	CAN CIRC 1 CAN CIRC 1 CAN CIRC 1	CAN CIRC 2 CAN CIRC 2			- - -	CAN CIRC 4 — CAN CIRC 3 CAN CIRC 4 CAN CIRC 4 CAN CIRC 4 —
CVT ABS SMART ENTRANCE SMART ENTRANCE eNGINE CVT ABS SMART ENTRANCE	CAN COMM CAN COMM CAN COMM ntrance control un CAN COMM CAN COMM CAN COMM CAN COMM	CAN CIRC 1 CAN CIRC 1 CAN CIRC 1 it CAN CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1	CAN CIRC 2 CAN CIRC 2 CAN CIRC 2 CAN CIRC 2 CAN CIRC 2 CAN CIRC 2				CAN CIRC 4 CAN CIRC 3 CAN CIRC 4 CAN CIRC 4 CAN CIRC 4 CAN CIRC 3
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CVT ABS SMART ENTRANCE ase 4: Replace Smart e ENGINE CVT ABS SMART ENTRANCE ENGINE CVT	CAN COMM CAN COMM CAN COMM ntrance control un CAN COMM CAN COMM CAN COMM CAN COMM CAN COMM	CAN CIRC 1 CAN CIRC 1	CAN CIRC 2 CAN CIRC 2 CAN CIRC 2 CAN CIRC 2 CAN CIRC 2 CAN CIRC 2 CAN CIRC 2				CAN CIRC 4 CAN CIRC 3 CAN CIRC 4 CAN CIRC 4 CAN CIRC 4 CAN CIRC 3 CAN CIRC 3
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CAN SYSTEM (TYPE 9)

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SMART ENTRANCE Ise 7 ENGINE CVT ABS	CAN COMM	CAN CIRC 1		_	_		CAN CIRC 3
se 7 ENGINE CVT ABS				·····			
ENGINE XVT ABS							
CVT ABS SMART ENTRANCE			_	CAN CARC 2	_	CAN CARC 6	CANORC 4
ABS		CANORC 1 CAN CIRC 1	CANORC 2		CAN CIRC 3		CAN CIRC 4
	CAN COMM	CAN CIRC 1	CANORC 2	_		_	
	CAN COMM	CAN CIRC 1	CANORC 2	_	_	_	CAN CIRC 3
ase 8 ENGINE	CAN COMM	CAN CIRC 1	_	CAN CRC 2	_	CAN CIRC 6	CAN CIRC 4
CVT	CAN COMM	CANORC 1	CANORC 2	-	CAN CRC 3	_	CANORC 4
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	_	_	_	_
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2	-	_	_	CAN CIRC 3
ase 9 ENGINE CVT ABS	CAN COMM CAN COMM	CAN CIRC 1 CAN CIRC 1	– CAN CIRC 2 CAN ORC 2	CAN CIRC 2	CAN CRC 3	CAN CIRC 6	CAN CIRC 4
SMART ENTRANCE	CAN COMM CAN COMM	CANORC 1			*		CAN CIRC 4
		CAN CIRC 1	CAN CIRC 2	-		-	CAN CIRC 4 — CAN CIRC 3
ENGINE CVT ABS	CAN COMM CAN COMM CAN COMM	CAN CIRC 1 CAN CIRC 1 CAN CIRC 1	CAN CIRC 2	CAN CIRC 2 — —		CAN CANC 6 –	CAN CIRC 3 CAN CIRC 3 CAN CIRC 4 CAN CIRC 4 -
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ENGINE CVT ABS SMART ENTRANCE Ise 11 ENGINE CVT	CAN COMM CAN COMM CAN COMM CAN COMM CAN COMM	CAN CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1	CAN CIRC 2 	CAN CIRC 2 — — — —		CAN C 6 — — — —	CAN CIRC 3 CAN CIRC 4 CAN CIRC 4 CAN CIRC 4 - CAN CIRC 3
ENGINE CVT ABS SMART ENTRANCE ase 11 ENGINE CVT ABS	CAN COMM CAN COMM CAN COMM CAN COMM	CAN CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1	CAN CIRC 2	CAN CIRC 2 — — — —		CAN C 6 — — — —	CAN CIRC 3 CAN CIRC 4 CAN CIRC 4 CAN CIRC 4 CAN CIRC 4 CAN CIRC 3 CAN CIRC 3
ENGINE CVT ABS SMART ENTRANCE ase 11 ENGINE CVT ABS SMART ENTRANCE	CAN COMM CAN COMM CAN COMM CAN COMM CAN COMM CAN COMM CAN COMM	CAN CIRC 1 CAN CIRC 1	CAN CIRC 2	CAN CIRC 2 — — — — — — — — — — — — — —		CAN CIRC 6 — — — — — — — — — — — — —	CAN CIRC 3
ENGINE CVT ABS SMART ENTRANCE ise 11 ENGINE CVT ABS SMART ENTRANCE ise 12 ENGINE	CAN COMM CAN COMM CAN COMM CAN COMM CAN COMM CAN COMM CAN COMM	CAN CIRC 1 CAN CIRC 1	CAN CIRC 2	CAN CIRC 2 — — — — — — — — — — — — — —		CAN CAN CIRC 6	CAN CIRC 3
ENGINE CVT ABS SMART ENTRANCE SMART ENTRANCE CVT ABS SMART ENTRANCE	CAN COMM CAN COMM CAN COMM CAN COMM CAN COMM CAN COMM CAN COMM	CAN CIRC 1 CAN CIRC 1	CAN CIRC 2	CAN CIRC 2 — — — — — — — — — — — — — —		CAN CIRC 6 — — — — — — — — — — — — —	CAN CIRC 3

NOTE:

If "NG" is displayed on "CAN COMM" for the diagnosed control unit, replace the control unit.

LAN-201

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 <u>LAN-204, "ECM Circuit Check"</u> Case 8:Check TCM Circuit. Refer to <u>LAN-204, "TCM Circuit Check"</u>

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

1. CHECK CONNECTOR

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- 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.

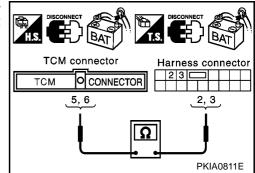
NG >> Repair terminal or connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

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

: Continuity should exist. : Continuity should exist.

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



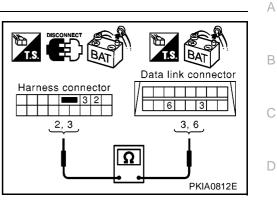
3. CHECK HARNESS FOR OPEN CIRCUIT

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)
- 2(R) 3(R)
- : Continuity should exist.
- : 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 COM-E MUNICATION 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". F

NG >> Repair harness.

Circuit Check Between Data Link Connector and Smart Entrance Control Unit EKS004110

1. CHECK CONNECTOR

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

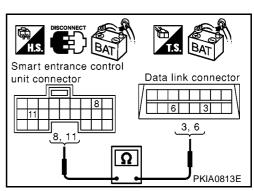
- Disconnect smart entrance control unit connector. 1.
- 2. Check continuity between smart entrance control unit harness connector M41 terminals 8 (L), 11 (R) and Data link connector M10 terminals 6 (L), 3 (R).
 - 8(L) 6(L)

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

- : Continuity should exist.

OK or NG

- OK >> Reconnect all connectors to perform "SELF-DIAG 8, 11 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.



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ECM Circuit Check

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

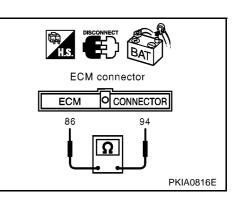
94(L) - 86(R)

: Approx. 108 – 132Ω

OK or NG

OK >> Replace ECM.

NG >> Repair harness between TCM and ECM.



TCM Circuit Check

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).

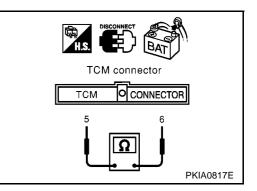
5(L) - 6(R)

: **Approx**. **54** – **66**Ω

OK or NG

OK >> Replace TCM.

NG >> Repair harness between TCM and ECM.



EKS004US

[CAN]

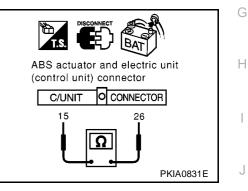
ABS Actuator and Electric Unit (control unit) Circuit Check 1. CHECK CONNECTOR	EKS004UT
1. Turn ignition switch OFF.	
2. Disconnect the negative battery terminal.	
 Check following terminals and connector for damage, bend and loose connection. (control u harness-side) 	init-side and
ABS actuator and 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 (con-	6

esistance between ABS trol unit) harness connector E64 terminals 26(L) and 15(R).

26(L) - 15(R) : **Approx. 54 – 66**Ω

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

1. CHECK CONNECTOR

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1. Turn ignition switch OFF.

- 2. Disconnect the negative battery terminal.
- Check terminals and connector of smart entrance control unit for damage, bend and loose connec-3. tion.(control unit-side and harness-side)

OK or NG

OK >> GO TO 2.

NG >> Repair terminal or connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

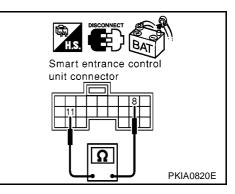
- Disconnect smart entrance control unit connector. 1.
- 2. Check resistance between smart entrance control unit harness connector M41 terminals 8(L) and 11(R).

8(L) - 11(R)

: **Approx. 54 – 66**Ω

OK or NG

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



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LAN-205

Combination Meter Circuit Check

1. CHECK CONNECTOR

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

: Approx. 108 – 132Ω

OK or NG

OK >> GO TO 2.

NG >> Repair terminal or connector.

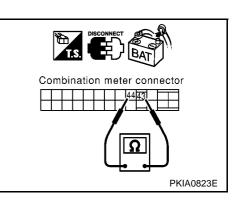
2. CHECK HARNESS FOR OPEN CIRCUIT

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

43(L) – 44(R)

OK or NG

- OK >> Replace combination meter.
- NG >> Repair harness between smart entrance control unit and combination meter.



CAN Communication Circuit Check

1. CHECK CONNECTOR

- 1. Turn ignition switch OFF.
- 2. Disconnect the negative battery terminal.
- 3. Check following terminals and connector for damage, 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

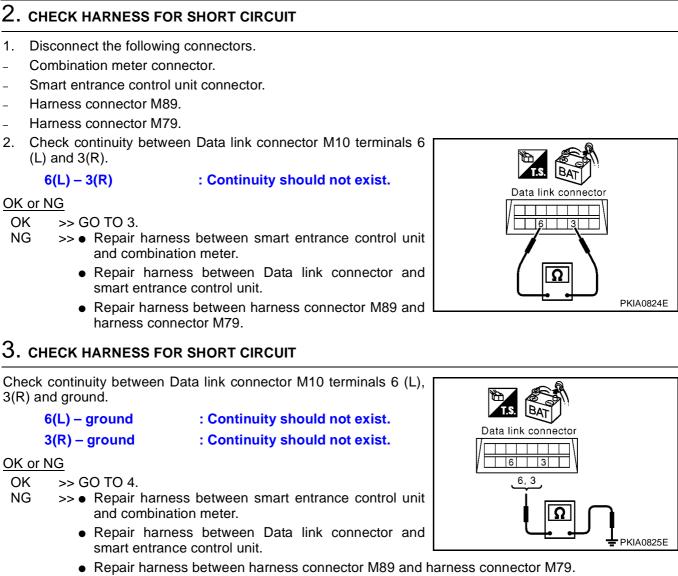
- OK >> GO TO 2.
- NG >> Repair terminal or connector.

LAN-206

EKS004UW

[CAN]

CAN SYSTEM (TYPE 9)



4. CHECK HARNESS FOR SHORT CIRCUIT

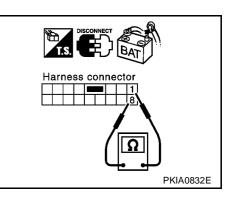
- 1. Disconnect harness connector B107.
- 2. Check the following.
- Continuity between harness connector B102 terminals 1 (L) and 8(G).(Sedan models)
- Continuity between harness connector B102 terminals 1 (L) and 8(R).(Wagon models)

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

OK or NG

OK >> GO TO 5.

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



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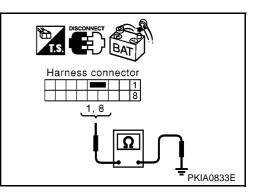
${\mathfrak B}_{\cdot}$ check harness for short circuit

3(R) and ground.

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)

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



OK or NG

OK >> GO TO 6.

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

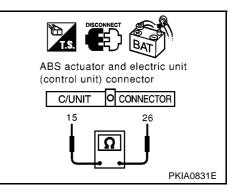
6. CHECK HARNESS FOR SHORT CIRCUIT

- 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

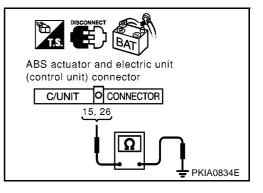
Check continuity between ABS actuator and electric unit (control unit) harness connector E64 terminals 26 (L), 15 (R) and ground.

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

15(R) – ground

: Continuity should not exist.

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



8. CHECK HARNESS FOR SHORT CIRCUIT

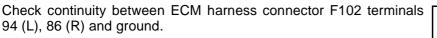
- Disconnect ECM connector and TCM connector. 1.
- 2. Check continuity between ECM harness connector F102 terminals 94 (L) and 86(R).
 - 94(L) 86(R)

: 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



94(L) – ground

86(R) – ground

- : Continuity should not exist. : 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

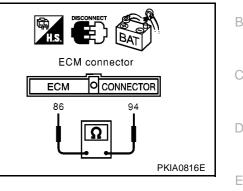
- LAN OK >> Reconnect all connectors to perform "SELF-DIAG RESULTS" and "DATA MONITOR" for "ENGINE", "CVT", "ABS", and "SMART ENTRANCE" displayed on CONSULT-II. Refer to EC-1083, "DTC U1000, U1001 CAN COMMUNICATION LINE" (WITH EURO-OBD) or EC-1505, "DTC U1000, U1001 CAN COMMUNICATION LINE" (WITHOUT EURO-OBD) for "ENGINE" and Refer to <u>CVT-118, "DTC U1000 CAN COMMUNICATION LINE"</u> (EURO-OBD) or <u>CVT-201, "CAN COMMUNICATION LINE"</u> (ALL) for "CVT". Refer to <u>BRC-33, "CAN Communication Circuit"</u> for "ABS". Refer to <u>BCS-40, "CAN Communication Line Check"</u> for "SMART ENTRANCE".
- NG >> Replace ECM and/or Combination meter.

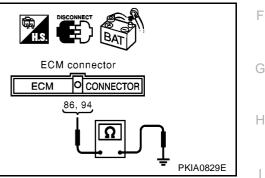
Component Inspection ECM / COMBINATION METER INTERNAL CIRCUIT INSPECTION

- 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	Applox. 100 - 152









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ECM and combination meter A

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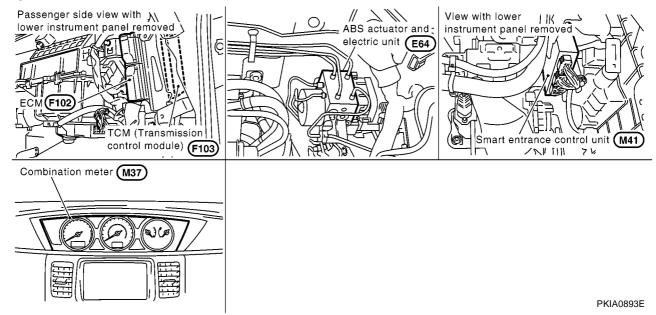
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CAN SYSTEM (TYPE 10)

System Description

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

Component Parts and Harness Connector Location

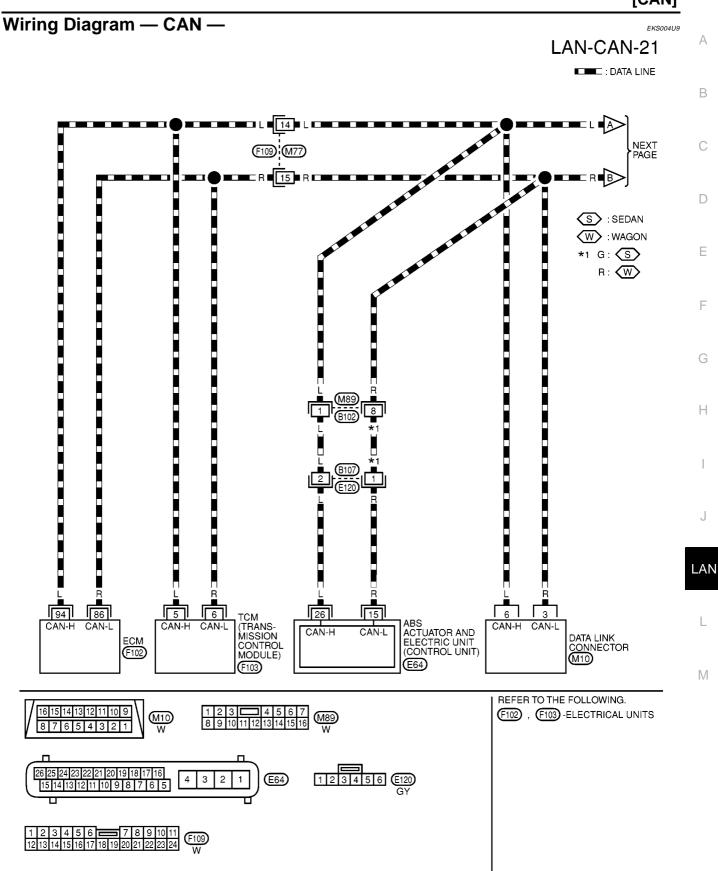


[CAN]

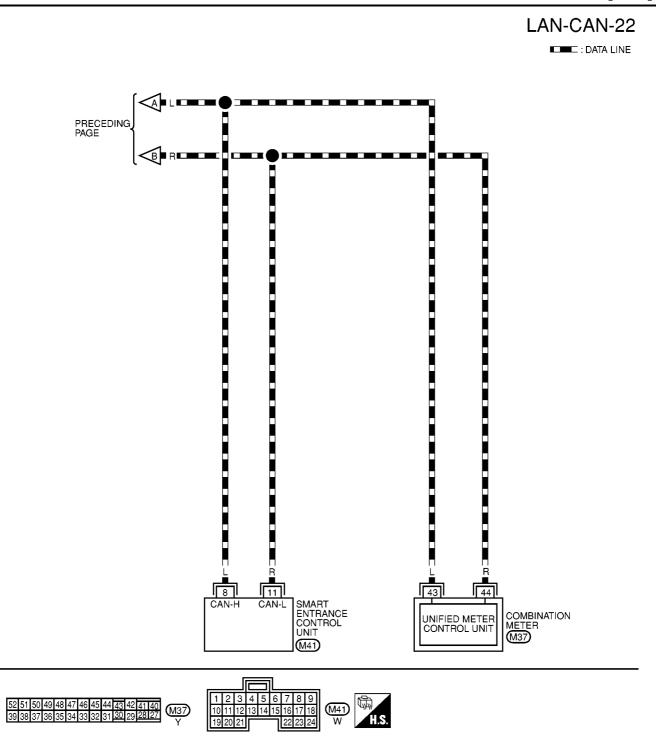
EK\$004U7

EKS004U8

[CAN]



MKWA0371E



MKWA0372E

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19 20 21

CAN SYSTEM (TYPE 10)

[CAN]

Wo	ork 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 <u>EC-150</u> , " <u>DTC U1000</u> , <u>U1001 CAN COMMU-NICATION LINE</u> " (WITH EURO-OBD) or <u>EC-663</u> , " <u>DTC U1000</u> , <u>U1001 CAN COMMUNICATION LINE</u> "	A
	(WITHOUT EURO-OBD) for "ENGINE" and Refer to <u>AT-190, "DTC U1000 CAN COMMUNICATION LINE"</u> (EURO-OBD) or <u>AT-393, "CAN COMMUNICATION LINE"</u> (ALL) for "A/T". Refer to <u>BRC-33, "CAN Communication Circuit"</u> for "ABS". Refer to <u>BCS-40, "CAN Communication Line Check"</u> for "SMART	В
0	ENTRANCE".	С
Ζ.	Attach the printed sheet of "SELF-DIAG RESULTS" and "DATA MONITOR" onto the check sheet. Refer to <u>LAN-214, "CHECK SHEET"</u>	
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"	D
	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	Е
ч.	RESULTS (EXAMPLE)"	
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CHECK SHEET

Check sheet table CAN COMM CAN CIRC 1 CAN CIRC 2 CAN CIRC 6 CAN CIRC 4 ENGINE A/T CAN COMM CAN CIRC 1 CAN CIRC 2 CAN CIRC 4 CAN COMM CAN CIRC 1 CAN CIRC 2 ABS _ _ _ _ SMART ENTRANCE CAN CIRC 2 CAN CIRC 3 CAN COMM CAN CIRC 1 _ _ Symptoms: Attach copy of Attach copy of Attach copy of Attach copy of ENGINE ABS SMART ENTRANCE A/T SELF-DIAG RESULTS SELF-DIAG RESULTS SELF-DIAG RESULTS SELF-DIAG RESULTS Attach copy of Attach copy of Attach copy of Attach copy of ENGINE A/T ABS SMART ENTRANCE DATA MONITOR DATA MONITOR DATA MONITOR DATA MONITOR

PKIA0744E

CHECK SHEET RESULTS (EXAMPLE)

ENGINE	CANCOMM	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	_	CANORC 2	-	CANORC 6	CANORC 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
ase 2: Replace TCM							
ENGINE	CAN COMM	CAN CIRC 1	-	CANORC 2	-	CAN CIRC 6	CAN CIRC 4
ΨT	CANCOMM	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
			1				
		CAN CIRC 1		CAN CIRC 2	_	CAN CIRC 6	CAN CIRC 4
A/T ABS		CAN CIRC 1	CANORC 2 CAN CIRC 2	_	_		CANORC 4
SMART ENTRANCE		CAN CIRC 1	CAN CIRC 2		_		
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2	_	_		CAN CIRC 3
A/T ABS		CAN CIRC 1 CAN CIRC 1	CAN CIRC 2 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	CANORC 2	-	-	_	-
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2	_	_	_	CAN CIRC 3
	Intrance control un						
	entrance control un		_	CAN CIRC 2	_	CAN CIBC 6	CAN CIRC 4
ENGINE	CAN COMM	CAN CIRC 1		CAN CIRC 2	-	CAN CIRC 6	CAN CIRC 4 CAN CIRC 4
ENGINE A/T	CAN COMM CAN COMM	CAN CIRC 1 CAN CIRC 1	CAN CIRC 2	CAN CIRC 2	_ _ _	CAN CIRC 6	CAN CIRC 4 CAN CIRC 4
ENGINE A/T ABS	CAN COMM	CAN CIRC 1		CAN CIRC 2	-	CAN CIRC 6 — — —	
ENGINE A/T ABS	CAN COMM CAN COMM CAN COMM	CAN CIRC 1 CAN CIRC 1 CAN CIRC 1	CAN CIRC 2 CAN CIRC 2	CAN CIRC 2 - - -	-	CAN CIRC 6	CAN CIRC 4
ENGINE A/T ABS SMART ENTRANCE	CAN COMM CAN COMM CAN COMM	CAN CIRC 1 CAN CIRC 1 CAN CIRC 1	CAN CIRC 2 CAN CIRC 2	CAN CIRC 2 - - CAN CIRC 2	-	CAN CIRC 6	CAN CIRC 4
ENGINE A/T ABS SMART ENTRANCE ENGINE	CAN COMM CAN COMM CAN COMM CAN COMM	CAN CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1	CAN CIRC 2 CAN CIRC 2 CAN CIRC 2	- - -	- - -	- - -	CAN CIRC 4 – CAN CIRC 3
ENGINE A/T ABS SMART ENTRANCE ENGINE A/T	CAN COMM CAN COMM CAN COMM CAN COMM	CAN CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1	CAN CIRC 2 CAN CIRC 2 CAN CIRC 2 	- - -	- - -	- - -	CAN CIRC 4 — CAN CIRC 3 CAN CIRC 4 CAN CIRC 4 —
ENGINE A/T ABS SMART ENTRANCE ENGINE A/T ABS	CAN COMM CAN COMM CAN COMM CANCOMM CANCOMM	CAN CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1	CAN CIRC 2 CAN CIRC 2 CAN CIRC 2 - CAN CIRC 2	- - -	- - -	- - -	CAN CIRC 4 - CAN CIRC 3 CAN CIRC 4
ENGINE A/T ABS SMART ENTRANCE ENGINE A/T ABS	CAN COMM CAN COMM CAN COMM CANCOMM CAN COMM CAN COMM CAN COMM	CAN CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1	CAN CIRC 2 CAN CIRC 2 CAN CIRC 2 		- - - - -		CAN CIRC 4 — CAN CIRC 3 CAN CIRC 4 CAN CIRC 4 —
ase 4: Replace Smart e ENGINE A/T ABS SMART ENTRANCE ENGINE A/T ABS SMART ENTRANCE	CAN COMM CAN COMM CAN COMM CAN COMM CAN COMM CAN COMM CAN COMM	CAN CIRC 1 CAN CIRC 1	CAN CIRC 2 CAN CIRC 2 CAN CIRC 2 		- - - - -		CAN CIRC 4
ENGINE A/T ABS SMART ENTRANCE ENGINE A/T ABS SMART ENTRANCE SMART ENTRANCE ase 5 ENGINE	CAN COMM CAN COMM CAN COMM CAN COMM CAN COMM CAN COMM CAN COMM	CAN CIRC 1 CAN CIRC 1	CAN CIRC 2 CAN CIRC 2 CAN CIRC 2 CAN CIRC 2 CAN CIRC 2 CAN CIRC 2 CAN CIRC 2		- - - - -		CAN CIRC 4
ENGINE A/T ABS SMART ENTRANCE ENGINE A/T ABS SMART ENTRANCE SMART ENTRANCE ASS 5 ENGINE A/T	CAN COMM CAN COMM CAN COMM CAN COMM CAN COMM CAN COMM CAN COMM CAN COMM	CAN CIRC 1 CAN CIRC 1	CAN CIRC 2 CAN CIRC 2 CAN CIRC 2 CAN CIRC 2 CAN CIRC 2 CAN CIRC 2 CAN CIRC 2		- - - - - - -		CAN CIRC 4
ENGINE A/T ABS SMART ENTRANCE ENGINE A/T ABS SMART ENTRANCE SMART ENTRANCE SMART ENTRANCE ASS ENGINE A/T ABS	CAN COMM CAN COMM CAN COMM CAN COMM CAN COMM CAN COMM CAN COMM CAN COMM CAN COMM	CAN CIRC 1 CAN CIRC 1	CAN CIRC 2 CAN CIRC 2		- - - - - - - - - -		CAN CIRC 4
ENGINE A/T ABS SMART ENTRANCE ENGINE A/T ABS SMART ENTRANCE SMART ENTRANCE ASS 5 ENGINE A/T	CAN COMM CAN COMM CAN COMM CAN COMM CAN COMM CAN COMM CAN COMM CAN COMM	CAN CIRC 1 CAN CIRC 1	CAN CIRC 2 CAN CIRC 2 CAN CIRC 2 CAN CIRC 2 CAN CIRC 2 CAN CIRC 2 CAN CIRC 2		- - - - - - - - - - - - - - -	CAN CIRC 6 	CAN CIRC 4

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PKIA0745E

CAN SYSTEM (TYPE 10)

Case 6

Case C							
ENGINE	CAN COMM	CAN CIRC 1	_	CAN CIRC 2	-	CAN CARC 6	CANORC 4
A/T	CAN COMM	CAN CIRC 1	CAN CIRC 2	-	—	—	CANORC 4
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	-	-	_	-
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CANORC 2	1	-	-	CAN CIRC 3

Case 7

ENGINE	CAN COMM	CANORC 1	—	CAN CRC 2	—	CANORC 6	CANOIRC 4
A/T	CAN COMM	CAN CIRC 1	CANORC 2	-	_	-	CAN CIRC 4
ABS	CAN COMM	CAN CIRC 1	CANORC 2	-	-	-	-
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CANORC 2	-	_	_	CAN CIRC 3

.....

Case 8

ENGINE	CAN COMM	CAN CIRC 1	-	CAN CRC 2	—	CAN CIRC 6	CAN CIRC 4
A/T	CAN COMM	CANORC 1	CANORC 2	_	_	_	CAN CRC 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	CANORC 1	CAN CARC 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	-	CANORC 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	CANORC 1	CAN CRC 2	—	-	—	CAN CRC 3

Case 11

ENGINE	CAN COMM	CAN CIRC 1	-	CAN CIRC 2	-	CAN CIRC 6	CANORC 4
A/T	CAN COMM	CAN CIRC 1	CAN CIRC 2	-	_	_	CANORC 4
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	_	_	_	—
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2	-	-	_	CAN ORC 3

Case 12

0030 12							
ENGINE	CAN COMM	CANORC 1	_	CANORC 2	-	CANCERC 6	CAN CRC 4
A/T	CAN COMM	CANORC 1	CANORC 2	-	-	-	CANORC 4
ABS	CAN COMM	CANOR 1	CANORC 2	_	_	_	-
SMART ENTRANCE	CAN COMM	CANORC 1	CANORC 2	-	_		CAN ORC 3

PKIA0746E

NOTE:

If "NG" is displayed on "CAN COMM" for the diagnosed control unit, replace the control unit.

[CAN]

LAN-216

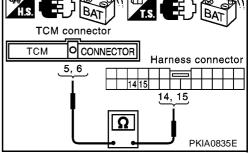
CAN SYSTEM (TYPE 10)

	[CAN]	
INS	SPECTION	
	ceed trouble diagnosis according to the check sheet results (example).	А
	se 1:Replace ECM.	
	se 2:Replace TCM.	
	se 3:Replace ABS actuator and electric unit (control unit).	В
	se 4:Replace Smart entrance control unit. se 5:Check Harness between TCM and Data link connector. Refer to LAN-217, "Circuit Check Between	
	M and Data Link Connector"	
	se 6:Check Harness between Data link connector and Smart entrance control unit. Refer to LAN-218, "Cir-	С
	t Check Between Data Link Connector and Smart Entrance Control Unit"	
	se 7:Check ECM Circuit. Refer to LAN-219, "ECM Circuit Check"	
	se 8:Check TCM Circuit. Refer to LAN-219, "TCM Circuit Check"	D
	se 9:Check ABS actuator and electric unit (control unit) Circuit. Refer to LAN-220, "ABS Actuator and Elec-	
	Unit (control unit) Circuit Check	
	se 10:Check Smart entrance control unit Circuit. Refer to LAN-220, "Smart Entrance Control Unit Circuit	Е
	eck"	
	se 11:Check Combination meter Circuit. Refer to LAN-221, "Combination Meter Circuit Check"	
Cas	se 12:Check CAN communication Circuit. Refer to <u>LAN-221, "CAN Communication Circuit Check"</u>	_
	CHECK CONNECTOR	I
1.	Turn ignition switch OFF.	G
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)	Н
•	TCM.	
•	ABS actuator and electric unit (control unit).	1
•	Between TCM and ABS actuator and electric unit (control unit).	1
Оĸ	or NG	
N		J
INC		
2.	CHECK HARNESS FOR OPEN CIRCUIT	LA
1.	Disconnect TCM connector and harness connector F109.	
2.	Check continuity between TCM harness connector F103 termi- nals 5 (L), 6 (R) and harness connector F109 terminals 14 (L), 15 (R).	L

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

OK or NG

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



Μ

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).

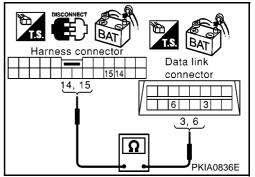
- 14(L) 6(L)
- 15(R) 3(R)

: Continuity should exist.

: 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 CON-SULT-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 COMMU-NICATION 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

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

- Disconnect smart entrance control unit connector. 1.
- 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

- 3, 6 OK >> Reconnect all connectors to perform "SELF-DIAG 8, 11 RESULTS" and "DATA MONITOR" for "ENGINE", "A/T", Ω "ABS", and "SMART ENTRANCE" displayed on CON-SULT-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.

LAN-218

Smart entrance control

18

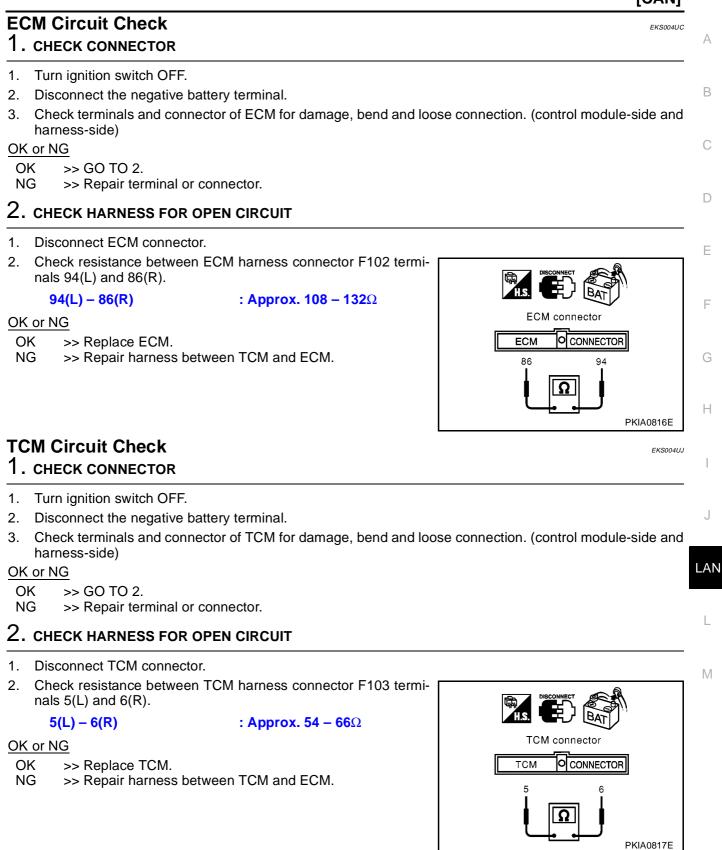
unit connector

Data link connector

6 3

PKIA0813E

CAN SYSTEM (TYPE 10)



ABS Actuator and Electric Unit (control unit) Circuit Check

1. CHECK CONNECTOR

- 1. Turn ignition switch OFF.
- 2. Disconnect the negative battery terminal.
- 3. Check following terminals and connector for damage, bend and loose connection. (control 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.

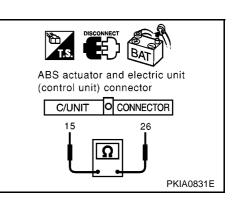
2. CHECK HARNESS FOR OPEN CIRCUIT

- 1. Disconnect ABS actuator and electric unit (control unit) connector.
- 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** – **66**Ω

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

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.

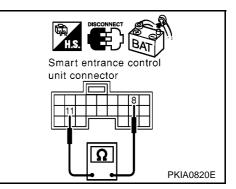
2. CHECK HARNESS FOR OPEN CIRCUIT

- 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.



EKS004UE

[CAN]

CAN SYSTEM (TYPE 10)

[CAN] **Combination Meter Circuit Check** EKS004UF А 1. CHECK CONNECTOR 1. Turn ignition switch OFF. В 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) С OK or NG OK >> GO TO 2. NG >> Repair terminal or connector. D 2. CHECK HARNESS FOR OPEN CIRCUIT 1. Disconnect combination meter connector. E 2. Check resistance between combination meter harness connector M37 terminals 43(L) and 44(R). 43(L) - 44(R): Approx. 108 – 132 Ω F Combination meter connector OK or NG OK >> Replace combination meter. NG >> Repair harness between smart entrance control unit and combination meter. Н PKIA0823E **CAN Communication Circuit Check** EKS004UG 1. CHECK CONNECTOR 1. Turn ignition switch OFF. J Disconnect the negative battery terminal. 2. 3. Check following terminals and connector for damage, bend and loose connection. (meter-side, control unit-side, control module-side and harness-side) LAN Combination meter.

Μ

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

<u>OK or NG</u>

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

$\overline{2}$. CHECK HARNESS FOR SHORT CIRCUIT

- 1. Disconnect the following connectors.
- Combination meter connector.
- Smart entrance control unit connector.
- Harness connector M89.
- Harness connector M77.
- Check continuity between Data link connector M10 terminals 6 (L) and 3(R).

6(L) - 3(R)

: Continuity should not exist.

OK or NG

NG

OK >> GO TO 3.

- >> 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
- 3(R) ground

: Continuity should not exist.

: 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

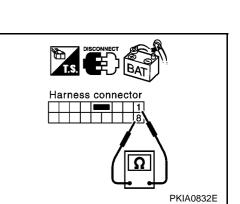
- 1. Disconnect harness connector B107.
- 2. Check the following.
- Continuity between harness connector B102 terminals 1 (L) and 8(G).(Sedan models)
- Continuity between harness connector B102 terminals 1 (L) and 8(R).(Wagon models)

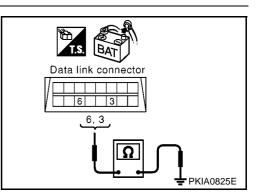
1(L) - 8(G) (Sedan
models): Continuity should not exist.1(L) - 8(R) (Wagon
models): Continuity should not exist.

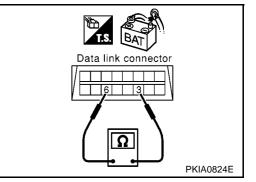
OK or NG

OK >> GO TO 5.

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





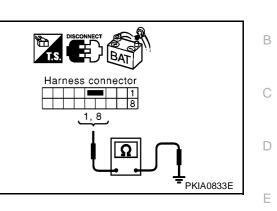


CAN SYSTEM (TYPE 10)

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.

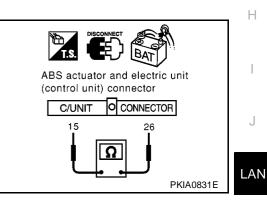
6. CHECK HARNESS FOR SHORT CIRCUIT

- 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.

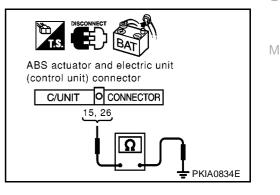
15(R) – ground

: Continuity should not exist.

OK or NG

OK	>> GO TO 8.
	~~ 00 10 0.

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



[CAN]

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- 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 : C
- 86(R) ground
- : Continuity should not exist.
- : Continuity should not exist.

OK or NG

- OK >> GO TO 10. NG >> ● Repair ha
 - 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 <u>LAN-224</u>, "ECM / COMBINATION METER INTERNAL CIRCUIT INSPECTION"

OK or NG

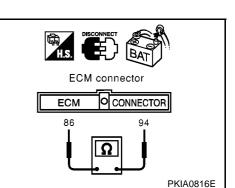
- OK >> Reconnect all connectors to perform "SELF-DIAG RESULTS" and "DATA MONITOR" for "ENGINE", "A/T", "ABS", and "SMART ENTRANCE" displayed on CONSULT-II. Refer to <u>EC-150,</u> "DTC U1000, U1001 CAN COMMUNICATION LINE" (WITH EURO-OBD) or <u>EC-663, "DTC</u> U1000, U1001 CAN COMMUNICATION LINE" (WITHOUT EURO-OBD) for "ENGINE" and Refer to <u>AT-190, "DTC U1000 CAN COMMUNICATION LINE"</u> (EURO-OBD) or <u>AT-393, "CAN COMMU-NICATION LINE"</u> (ALL) for "A/T". Refer to <u>BRC-33, "CAN Communication Circuit"</u> for "ABS". Refer to <u>BCS-40, "CAN Communication Line Check"</u> for "SMART ENTRANCE".
- NG >> Replace ECM and/or Combination meter.

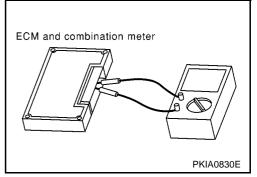
Component Inspection ECM / COMBINATION METER INTERNAL CIRCUIT INSPECTION

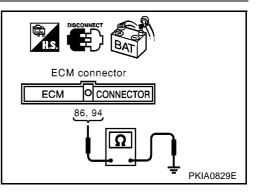
- Remove ECM and Combination meter from vehicle.
- Check resistance between ECM terminals 94 and 86.
- Check resistance between Combination meter terminals 43 and 44.

Unit	Terminal	Resistance value (Ω)
ECM	94 - 86	Approx. 108 - 132
Combination meter	43 – 44	Applox. 100 - 152









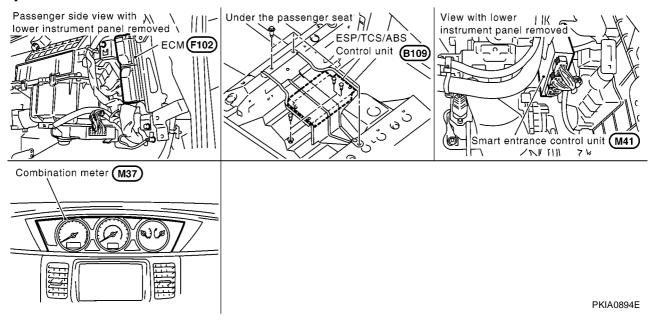
EKS004UH

CAN SYSTEM (TYPE 11)

System Description

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

Component Parts and Harness Connector Location



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PFP:23710

EKS004UY

EKS004UZ

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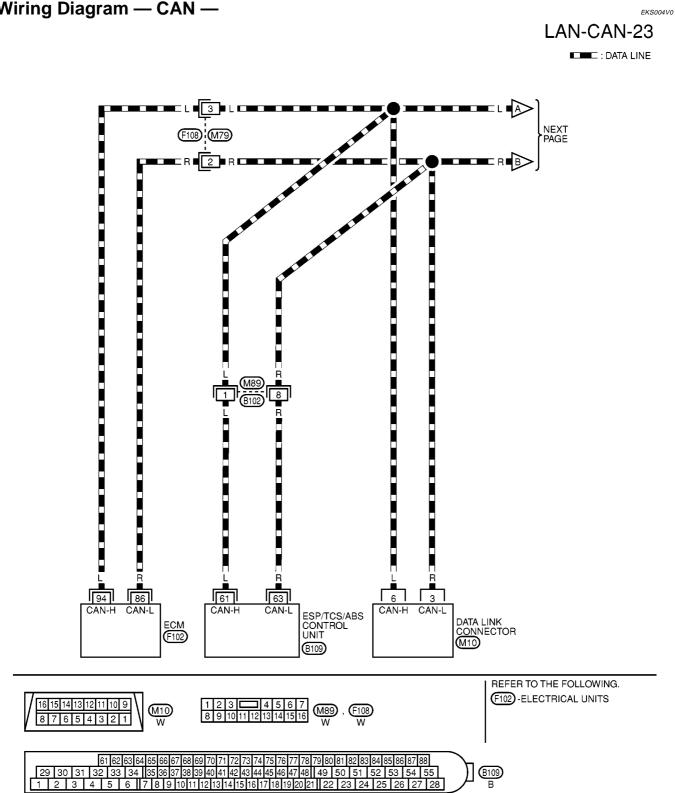
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Wiring Diagram — CAN —





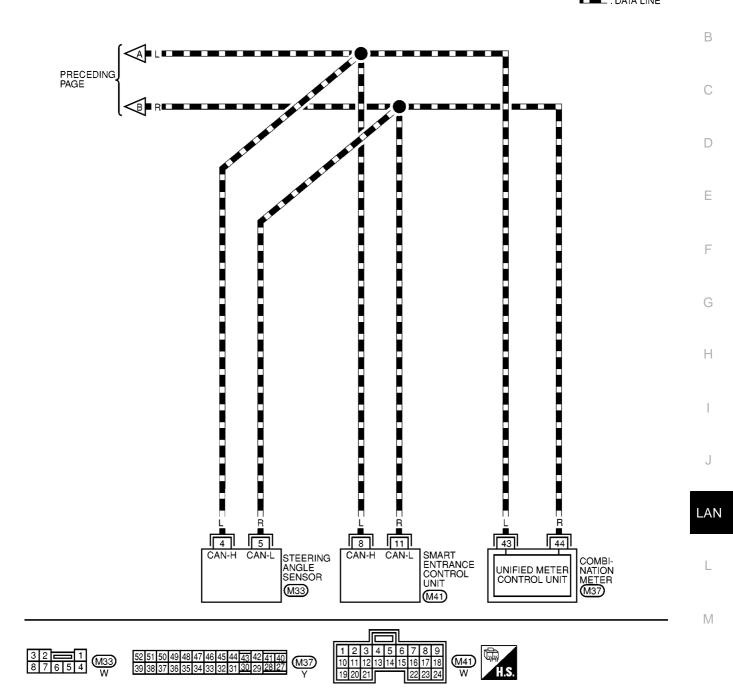
MKWA0373E





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Work Flow

EKS004V1

- Print all the data of "SELF-DIAG RESULTS" and "DATA MONITOR" for "ENGINE", "ABS", and "SMART ENTRANCE" displayed on CONSULT-II. Refer to <u>EC-1083, "DTC U1000, U1001 CAN COMMUNICA-TION LINE"</u> (WITH EURO-OBD) or <u>EC-1505, "DTC U1000, U1001 CAN COMMUNICATION LINE"</u> (WITHOUT EURO-OBD) for "ENGINE" and Refer to <u>BRC-107, "Inspection 15 CAN Communication Circuit, ESP/TCS/ABS Control Unit and Steering Angle Sensor"</u> for "ABS". Refer to <u>BCS-40, "CAN Communication Line Check"</u> for "SMART ENTRANCE".
- 2. Attach the printed sheet of "SELF-DIAG RESULTS" and "DATA MONITOR" onto the check sheet. Refer to <u>LAN-229, "CHECK SHEET"</u>
- Based on the data monitor results, put "v" marks onto the items with "UNKWN" or "NG" in the check sheet table. Refer to <u>LAN-229</u>, "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 <u>LAN-230</u>, "CHECK SHEET <u>RESULTS (EXAMPLE)"</u>

CAN SYSTEM (TYPE 11)

CHECK SHEET

А В Check sheet table ENGINE CAN COMM CAN CIRC 1 CAN CIRC 3 CAN CIRC 6 CAN CIRC 4 _ _ CAN COMM ABS CAN CIRC 1 CAN CIRC 2 CAN CIRC 5 SMART ENTRANCE CAN COMM CAN CIRC 1 CAN CIRC 2 CAN CIRC 3 С _ _ _ Symptoms: D Е F G Attach copy of Attach copy of Attach copy of SMART ENTRANCE ENGINE ABS SELF-DIAG RESULTS SELF-DIAG RESULTS SELF-DIAG RESULTS Н J LAN L Attach copy of Attach copy of Attach copy of ENGINE ABS SMART ENTRANCE DATA MONITOR DATA MONITOR DATA MONITOR Μ

PKIA0747E

CHECK SHEET RESULTS (EXAMPLE)

ENGINE ABS SMART ENTRANCE ENGINE ABS SMART ENTRANCE ase 2: Replace ESP/TCS/A	CANCOMM CAN COMM CAN COMM CAN COMM	CAN CIRC 1 CAN CIRC 1 CAN CIRC 1	CAN CIRC 2 CAN CIRC 2	CAN CIRC 3 —	CAN CIRC 5	CAN CIRC 6 —	CAN CIRC 4 —
SMART ENTRANCE	CAN COMM				0,440,1100		
ENGINE ABS SMART ENTRANCE				_	-	-	CAN CIRC 3
ABS SMART ENTRANCE	CAN COMM		<i>c) c c</i> _				
ABS SMART ENTRANCE		CAN CIRC 1	_	CANORC 3	_	CANORC 6	CANORC 4
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2		CAN CIRC 5		
	CAN COMM	CAN CIRC 1	CAN CIRC 2		-	_	CAN CIRC 3
ase 2: Replace ESP/TCS/A							
ase 2: Replace ESP/TCS/A							
ase 2: Replace ESP/TCS/A							
	BS control unit						
ENGINE	CAN COMM	CAN CIRC 1	-	CAN CRC 3	-	CAN CIRC 6	CAN CIRC 4
ABS	CANCOMM	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	CANOIRC 2	_	CANORC 5	_	_
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2	_	_	-	CAN CIRC 3
and Q: Doplose Orest							
ase 3: Replace Smart entra							
ENGINE ABS	CAN COMM CAN COMM	CAN CIRC 1 CAN CIRC 1		CAN CIRC 3		CAN CIRC 6	CAN CIRC 4
			CAN CIRC 2	-	CAN CIRC 5	_	
SMART ENTRANCE	CANCOMM	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	CANORC 2	—	—	—	CANO IRC 3
ase 4 ENGINE	CAN COMM	CAN CIRC 1	_	CAN CIRC 3	_	CANORC 6	CANORC
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	-	CANORC 5		_
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CANORC 2	_	_	_	CAN CIRC 3
ase 5							
ENGINE	CAN COMM	CANORC 1	_	CANORC 3	_	CAN CRC 6	CANORC
ABS	CAN COMM	CAN CIRC 1	CANORC 2	_	CAN CIRC 5	-	_
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CANORC 2	—	—	-	CAN CIRC:
ase 6							
ENGINE	CAN COMM	CAN CIRC 1	_	CAN CRC 3	_	CAN CIRC 6	CAN CIRC 4
ABS	CAN COMM	CANORC 1	CAN CRC 2		CANORC 5	_	
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2	_	_	_	CAN CIRC 3
	5 500.001	2.2. 5	2 0	L			2, 00
ase 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	_	CANORC 5	_	_
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2		_	_	CAN CIRC 3
I							

CAN SYSTEM (TYPE 11)

[CAN]

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Case 8

Case o							
ENGINE	CAN COMM	CAN CIRC 1	—	CAN CIRC 3	_	CANORC 6	CAN CIRC 4
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	_	CAN CIRC 5	-	-
SMART ENTRANCE	CAN COMM	CANORC 1	CANORC 2	_	_	-	CANORC 3

00000

Case 9							
ENGINE	CAN COMM	CAN CIRC 1	—	CAN CIRC 3	—	CAN CIRC 6	CANORC 4
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	—	CAN CIRC 5	_	—
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2	—	-	_	CANORC 3

ENGINE	CAN COMM	CANORC 1	_	CANORC 3	—	CANORC 6	CANCIRC 4
ABS	CAN COMM	CANORC 1	CANORC 2	-	CANORC 5	-	-
SMART ENTRANCE	CAN COMM	CANORC 1	CANORC 2	-	_	—	CANORC 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

M

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.

LAN-231

2. CHECK HARNESS FOR OPEN CIRCUIT

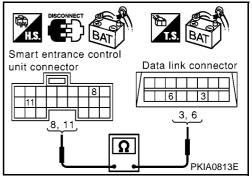
- 1. Disconnect smart entrance control unit connector.
- 2. Check continuity between smart entrance control unit harness connector M41 terminals 8 (L), 11 (R) and Data link connector M10 terminals 6 (L), 3 (R).
 - 8(L) 6(L) 11(R) - 3(R)

: Continuity should exist.

: 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 CON-SULT-II. Refer to <u>EC-1083</u>, "DTC U1000, U1001 CAN <u>COMMUNICATION LINE</u>" (WITH EURO-OBD) or <u>EC-</u>



1505, "DTC U1000, U1001 CAN COMMUNICATION LINE" (WITHOUT EURO-OBD) for "ENGINE" and Refer to <u>BRC-107</u>, "Inspection 15 CAN Communication Circuit, ESP/TCS/ABS Control Unit and Steering Angle Sensor" for "ABS". Refer to <u>BCS-40</u>, "CAN Communication Line <u>Check</u>" for "SMART ENTRANCE".

NG >> Repair harness.

ECM Circuit Check

1. CHECK CONNECTOR

- 1. Turn ignition switch OFF.
- 2. Disconnect the negative battery terminal.
- 3. Check following terminals and connector for damage, 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

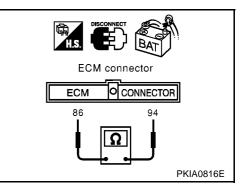
- 1. Disconnect ECM connector.
- Check resistance between ECM harness connector F102 terminals 94(L) and 86(R).

94(L) - 86(R)

: Approx. 108 – 132 Ω

OK or NG

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



EKS004V4

CO/TCC/ADS Control Unit Circuit Chook	[CAN]
ESP/TCS/ABS Control Unit Circuit Check	EKS004V
. Turn ignition switch OFF.	
2. Disconnect the negative battery terminal.	
 Check following terminals and connector for damage, bend and harness-side) 	l loose connection. (control unit-side and
 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.	
 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	ESP/TCS/ABS control unit connector
OK >> Replace ESP/TCS/ABS control unit.	C/UNIT O CONNECTOR
NG >> Repair harness between Data link connector and ESP/ TCS/ABS control unit.	61 63
	PKIA0818E
Steering Angle Sensor Circuit Check	EKSONAV
1. CHECK CONNECTOR	
1. Turn ignition switch OFF.	
2. Disconnect the negative battery terminal.	
2 Check terminals and connector of stearing angle sensor for dame	and hand and loose connection (conser

3. Check terminals and connector of steering angle sensor for damage, bend and loose connection. (sensorside and harness-side)

OK or NG

OK >> GO TO 2.

NG >> Repair terminal or connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

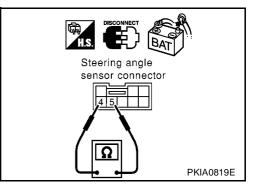
- 1. Disconnect steering angle sensor connector.
- 2. Check resistance between steering angle sensor harness connector M33 terminals 4(L) and 5(R).

4(L) - 5(R)

: **Approx. 54 – 66**Ω

OK or NG

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



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Smart Entrance Control Unit Circuit Check

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

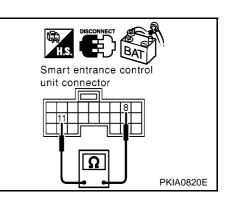
- 1. Disconnect smart entrance control unit connector.
- 2. Check resistance between smart entrance control unit harness connector M41 terminals 8(L) and 11(R).

8(L) – 11(R)

: **Approx. 54 – 66**Ω

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

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.

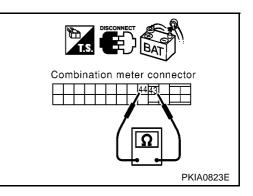
2. CHECK HARNESS FOR OPEN CIRCUIT

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

: Approx. 108 – 132Ω

OK or NG

- OK >> Replace combination meter.
- NG >> Repair harness between smart entrance control unit and combination meter.



EKS004V8

[CAN]

[CAN] **CAN Communication Circuit Check** EKS004V9 А 1. CHECK CONNECTOR 1. Turn ignition switch OFF. В 2. Disconnect the negative battery terminal. Check following terminals and connector for damage, bend and loose connection. (meter-side, control 3. unit-side, sensor-side, control module-side and harness-side) С Combination meter. Smart entrance control unit. Steering angle sensor. D ESP/TCS/ABS control unit. ECM. Between ESP/TCS/ABS control unit and ECM. E OK or NG OK >> GO TO 2. >> Repair terminal or connector. NG F 2. CHECK HARNESS FOR SHORT CIRCUIT Disconnect the following connectors. 1. Combination meter connector. Smart entrance control unit connector. Н Steering angle sensor connector. Harness connector M89. _ Harness connector M79. Check continuity between Data link connector M10 terminals 6 2. (L) and 3(R). 6(L) - 3(R): Continuity should not exist. Data link connector OK or NG OK >> GO TO 3. LAN NG >> • Repair harness between smart entrance control unit and combination meter. • Repair harness between smart entrance control unit Ω

- and steering angle sensor.
 Repair harness between Data link connector and steering angle sensor.
- Repair harness between harness connector M89 and harness connector M79.

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

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

: 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

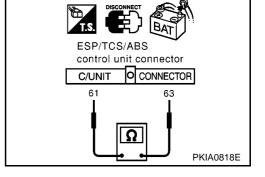
- 1. Disconnect ESP/TCS/ABS control unit connector.
- 2. Check continuity between ESP/TCS/ABS control unit harness connector B109 terminals 61 (L) and 63(R).

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.

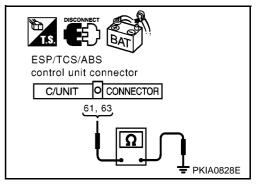


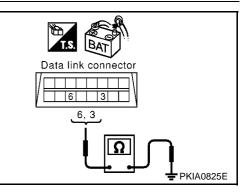
5. CHECK HARNESS FOR SHORT CIRCUIT

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

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

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



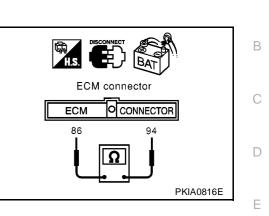


- 1. Disconnect ECM connector.
- 2. Check continuity between ECM harness connector F102 terminals 94 (L) and 86(R).
 - 94(L) 86(R)

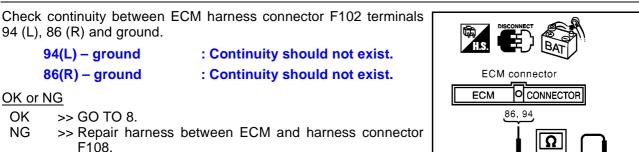
: Continuity should not exist.

OK or NG

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



7. CHECK HARNESS FOR SHORT CIRCUIT



8. ECM / COMBINATION METER INTERNAL CIRCUIT INSPECTION

Check components inspection. Refer to LAN-237, "ECM / COMBINATION METER INTERNAL CIRCUIT INSPECTION"

OK or NG

OK

NG

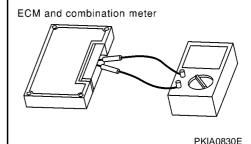
LAN OK >> Reconnect all connectors to perform "SELF-DIAG RESULTS" and "DATA MONITOR" for "ENGINE", "ABS", and "SMART ENTRANCE" displayed on CONSULT-II. Refer to <u>EC-1083, "DTC</u> U1000, U1001 CAN COMMUNICATION LINE" (WITH EURO-OBD) or EC-1505, "DTC U1000, U1001 CAN COMMUNICATION LINE" (WITHOUT EURO-OBD) 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 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	Approx. 100 - 132



[CAN]

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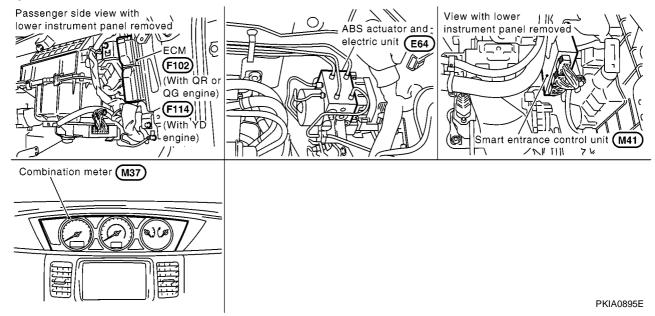
EKS004VA

CAN SYSTEM (TYPE 12)

System Description

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

Component Parts and Harness Connector Location



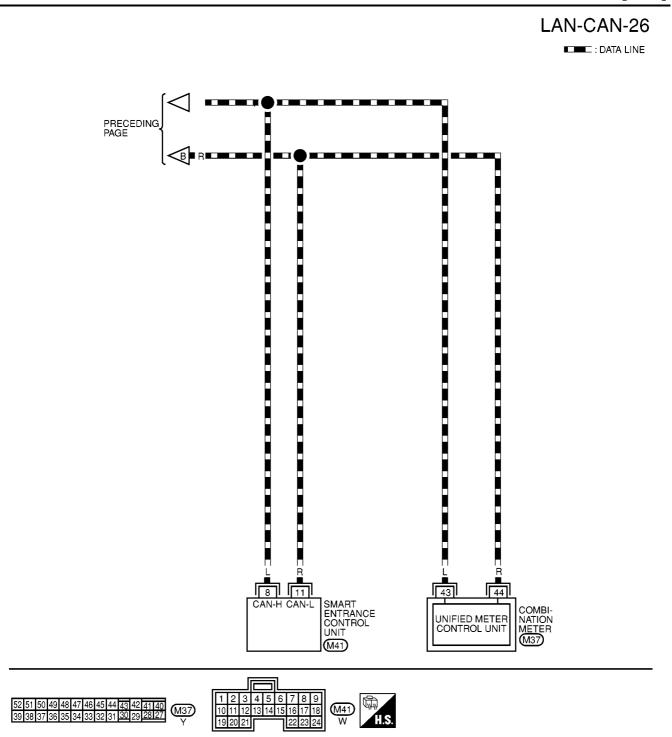
EKS004SS

EKS004ST

CAN SYSTEM (TYPE 12)

[CAN] Wiring Diagram — CAN – EKS004SU А G: WITH GASOLINE ENGINE LAN-CAN-25 S: SEDAN WAGON : WAGON DATA LINE QR : WITH QR ENGINE *1 94 : G QG: WITH QG ENGINE В E11 : D **__**L **|** *3 L *2 86 : G (F108 OR) **(**M79 NEXT PAGE E10: D (F109) QG (M77) (QG) С (F110) *3 3: QR D : 14 : 📿 G ⊐== R ∎B> *4 1: D D *4 2: QR 15 : QG 4 : D Е *5 G: S R : 🖤 F (M8 **T** Н 8 (B10) (B10 12 J R LAN R R R *2 3 *****1 26 15 6 ABS ACTUATOR AND ELECTRIC UNIT (CONTROL UNIT) L CAN-H CAN-L CAN-H CAN-L ECM CAN-L CAN-H DATA LINK CONNECTOR (F102) : G (M10) (F114) : () (E64) Μ REFER TO THE FOLLOWING. (F102), (F114) -ELECTRICAL UNITS 16 15 14 13 12 11 10 9 1 2 3 **4** 5 6 7 8 9 10 11 12 13 14 15 16 (M10)), (F108) W (M89) 8765432 1 W 26 25 24 23 22 21 20 19 18 17 16 123456 E120 GY 4 З 2 1 (E64) 15 14 13 12 11 10 9 8 7 6 5 1 2 3 4 5 6 **—** 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 123 45678 F110 W (F109) W

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MKWA0376E

[CAN]

Wo	ork Flow EK50045V	
1.	Print all the data of "SELF-DIAG RESULTS" and "DATA MONITOR" for "ENGINE", "ABS", and "SMART ENTRANCE" displayed on CONSULT-II. Refer to <u>EC-150</u> , "DTC U1000, U1001 CAN COMMUNICATION LINE" (QG ENGINE MODELS WITH EURO-OBD), <u>EC-663</u> , "DTC U1000, U1001 CAN COMMUNICA-	А
	TION LINE" (QG ENGINE MODELS WITHOUT EURO-OBD), <u>EC-1083</u> , "DTC U1000, U1001 CAN COMMUNICATION LINE" (QR ENGINE MODELS WITH EURO-OBD), <u>EC-1505</u> , "DTC U1000, U1001	В
	<u>CAN COMMUNICATION LINE</u> " (QR ENGINE MODELS WITHOUT EURO-OBD) or <u>EC-1790</u> , "DTC <u>U1000 CAN COMMUNICATION LINE</u> " (YD ENGINE MODELS) for "ENGINE" and Refer to <u>BRC-33</u> , " <u>CAN Communication Circuit</u> " for "ABS". Refer to <u>BCS-40</u> , " <u>CAN Communication Line Check</u> " for "SMART ENTRANCE".	С
2.	Attach the printed sheet of "SELF-DIAG RESULTS" and "DATA MONITOR" onto the check sheet. Refer to LAN-242, "CHECK SHEET"	D
3.	Based on the data monitor results, put "v" marks onto the items with "UNKWN" or "NG" in the check sheet table. Refer to <u>LAN-242</u> , "CHECK SHEET"	_
	NOTE: If "NG" is displayed on "CAN COMM" for the diagnosed control unit, replace the control unit.	E
4.	According to the check sheet results (example), start inspection. Refer to <u>LAN-243</u> , " <u>CHECK SHEET</u> <u>RESULTS (EXAMPLE)</u> "	F
		G
		Η
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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 3 CAN CIRC 2 _ _ Symptoms: Attach copy of Attach copy of Attach copy of SMART ENTRANCE ENGINE ABS SELF-DIAG RESULTS SELF-DIAG RESULTS SELF-DIAG RESULTS Attach copy of Attach copy of Attach copy of ENGINE ABS SMART ENTRANCE DATA MONITOR DATA MONITOR DATA MONITOR

PKIA0750E

CHECK SHEET RESULTS (EXAMPLE)

ABS	CANCOMM	CAN CIRC 1	—		-	CAN CIRC 4
1.20	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	_	-		CANORC 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 actua	tor and electric unit (c	control unit)				
ENGINE	CAN COMM	CAN CIRC 1	-	_	_	CAN CIRC 4
ABS	CANCOMM	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	CANORC 2	-	_	-
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2	-	-	CAN CIRC 3
Case 3: Replace Smart entra	ance control unit					
ENGINE	CAN COMM	CAN CIRC 1	_	-	—	CAN CIRC 4
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	_	_	-
SMART ENTRANCE	CANCOMM	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	CANNARC 2			
		CAN CIRC 1				CANOTHC 3
Case 4 ENGINE			· · · · · · · · · · · · · · · · · · ·			
Case 4 ENGINE ABS SMART ENTRANCE Case 5 ENGINE ABS	CAN COMM CAN COMM CAN COMM CAN COMM CAN COMM	CAN CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1	CAN CIRC 2 CAN CIRC 2 CAN CIRC 2			CANORC 4 — CAN CIRC 3 CANORC 4 —
Case 4 ENGINE ABS SMART ENTRANCE Case 5 ENGINE	CAN COMM CAN COMM CAN COMM CAN COMM	CAN CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1	− CAN CIRC 2 CAN ØRC 2	 	- - - -	CANORC 4 — CAN CIRC 3
ase 4 ENGINE ABS SMART ENTRANCE ase 5 ENGINE ABS SMART ENTRANCE	CAN COMM CAN COMM CAN COMM CAN COMM CAN COMM CAN COMM	CAN CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1	CAN CIRC 2 CAN CIRC 2 CAN CIRC 2	 	- - - -	CANNERC 4 — CAN CIRC 3 CANNERC 4 — CANNERC 4 — CAN CIRC 3
Case 4 ENGINE ABS SMART ENTRANCE Case 5 ENGINE ABS SMART ENTRANCE	CAN COMM CAN COMM CAN COMM CAN COMM CAN COMM CAN COMM	CAN CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1	CAN CIRC 2 CAN CIRC 2 CAN CRC 2	 	- - - -	CANORC 4 — CAN CIRC 3 CANORC 4 —
Case 4 ENGINE ABS SMART ENTRANCE Case 5 ENGINE ABS SMART ENTRANCE Case 6 ENGINE ABS	CAN COMM CAN COMM CAN COMM CAN COMM CAN COMM CAN COMM CAN COMM	CAN CIRC 1 CAN CIRC 1	- CAN CIRC 2 CAN	 	- - - -	CANOTRC 4 CANOTRC 4 CANOTRC 4 CANOTRC 4 CAN CIRC 3
Case 4 ENGINE ABS SMART ENTRANCE Case 5 ENGINE ABS SMART ENTRANCE Case 6 ENGINE	CAN COMM CAN COMM CAN COMM CAN COMM CAN COMM CAN COMM	CAN CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1	CAN CIRC 2 CAN CIRC 2 CAN CRC 2	 	- - - -	CANNERC 4 — CAN CIRC 3 CANNERC 4 — CANNERC 4 — CAN CIRC 3
ase 4 ENGINE ABS SMART ENTRANCE ase 5 ENGINE ABS SMART ENTRANCE case 6 ENGINE ABS SMART ENTRANCE	CAN COMM CAN COMM CAN COMM CAN COMM CAN COMM CAN COMM CAN COMM	CAN CIRC 1 CAN CIRC 1	- CAN CIRC 2 CAN	 	- - - -	CANOTRC 4 CANOTRC 4 CANOTRC 4 CANOTRC 4 CAN CIRC 3
ase 4 ENGINE ABS SMART ENTRANCE ase 5 ENGINE ABS SMART ENTRANCE case 6 ENGINE ABS SMART ENTRANCE	CAN COMM CAN COMM CAN COMM CAN COMM CAN COMM CAN COMM CAN COMM	CAN CIRC 1 CAN CIRC 1	- CAN CIRC 2 CAN	 	- - - -	CANOTRC 4 CANOTRC 4 CANOTRC 4 CANOTRC 4 CAN CIRC 3
Case 4 ENGINE ABS SMART ENTRANCE Case 5 ENGINE ABS SMART ENTRANCE Case 6 ENGINE ABS SMART ENTRANCE	CAN COMM CAN COMM CAN COMM CAN COMM CAN COMM CAN COMM CAN COMM CAN COMM	CAN CIRC 1 CAN CIRC 1	- CAN CIRC 2 CAN			CANORC 4 CAN CIRC 3 CAN CIRC 3 CAN CIRC 4 CAN CIRC 3 CAN CIRC 4 CAN CIRC 4 CAN CIRC 4

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ENGINE	CAN COMM	CAN CIRC 1	-	_	-	—	CANORC 4
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	_	-	-	-
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2	_	-	_	CANORC 3
ise 9							
ENGINE	CAN COMM	CANOR 1	—	—	—	—	CANORC 4
ABS	CAN COMM	CANORC 1	CANORC 2	-	-	_	-
SMART ENTRANCE	CAN COMM	CANORC 1	CANORC 2	_	-	_	CANORC 3

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 <u>LAN-244, "Circuit Check Between Data Link Connector and Smart Entrance Control Unit"</u>

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 <u>LAN-246</u>, "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 <u>LAN-247</u>, "Combination <u>Meter Circuit Check"</u> Case 9:Check CAN communication Circuit. Refer to <u>LAN-248</u>, "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.

[CAN]

$2. \ \mathsf{CHECK} \ \mathsf{HARNESS} \ \mathsf{FOR} \ \mathsf{OPEN} \ \mathsf{CIRCUIT}$

- 1. Disconnect smart entrance control unit connector.
- 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)
 - 11(R) 3(R)
- : Continuity should exist.
- : Continuity should exist.

OK or NG

3, 6 OK >> Reconnect all connectors to perform "SELF-DIAG 8, 11 RESULTS" and "DATA MONITOR" for "ENGINE", Ω "ABS", and "SMART ENTRANCE" displayed on CON-PKIA0813E SULT-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 COM-MUNICATION 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".

Smart entrance control

unit connector

11

NG >> Repair harness.

ECM Circuit Check

- **1. CHECK CONNECTOR**
- 1. Turn ignition switch OFF.
- 2. Disconnect the negative battery terminal.
- 3. Check following terminals and connector for damage, 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.

Data link connector

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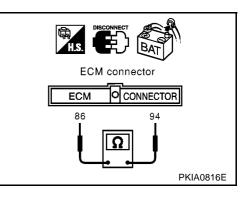
- LAN

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- 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)

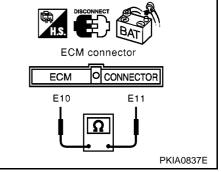
E11(L) – E10(R) (Diesel enging models)

: Approx. 108 – 132 Ω

OK or NG

OK >> Replace ECM.

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



ABS Actuator and Electric Unit (control unit) Circuit Check

1. CHECK CONNECTOR

EKS004SY

- 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.

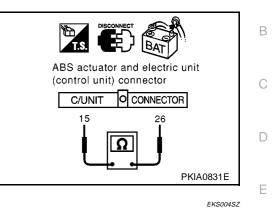
2. CHECK HARNESS FOR OPEN CIRCUIT

- 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** – **66**Ω

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

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 connec- (tion.(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 – 66 Ω

OK or NG

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

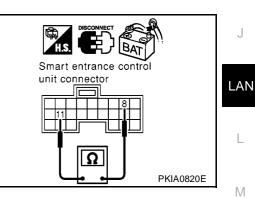
Combination Meter Circuit Check

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.



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$\overline{2}$. CHECK HARNESS FOR OPEN CIRCUIT

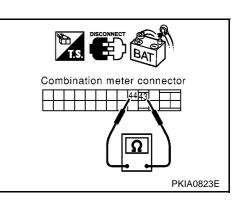
- 1. Disconnect combination meter connector.
- 2. Check resistance between combination meter harness connector M37 terminals 43(L) and 44(R).

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

1. CHECK CONNECTOR

EKS004T1

- 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.

CAN SYSTEM (TYPE 12)

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[CAN] 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) Check continuity between Data link connector M10 terminals 6 2. (L) and 3(R). 6(L) - 3(R): Continuity should not exist. Data link connecto 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 Ω smart entrance control unit. PKIA0824E 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. Data link connector 3(R) – ground : Continuity should not exist. 6 3 OK or NG OK >> GO TO 4. 6, 3 NG >> • Repair harness between smart entrance control unit and combination meter. Ω • Repair harness between Data link connector and PKIA0825E 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)

- 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) 1(L) - 8(R) (Wagon

: Continuity should not exist.

models)

Harness connector : Continuity should not exist.

OK or NG

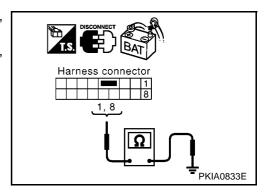
OK >> GO TO 5.

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

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

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

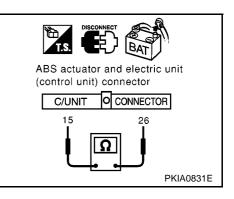
26(L) - 15(R)

: 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.



PKIA0832E

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

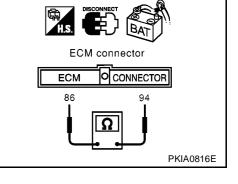
- OK >> GO TO 8.
- NG >> Repair harness between ABS actuator and electric unit (control unit) and harness connector E120.



- Disconnect ECM connector. 1.
- 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.



ABS actuator and electric unit

15, 26

O CONNECTOR

(control unit) connector

C/UNIT

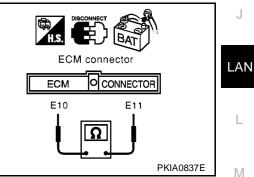
Continuity between ECM harness connector F114 terminals E11 (L) and E10(R).(Diesel engine models)

E11(L) - E10(R) (Die-: Continuity should not exist. sel enging models)

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)



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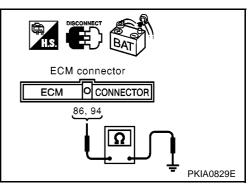
В

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

```
94(L) – ground (Gaso-
line enging models)
86(R) – ground (Gas-
oline enging models)
```

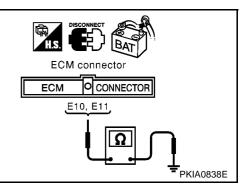
: Continuity should not exist.

(Gas-: 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 mod- : Continuity should not exist.
els)
E10(R) – ground
(Diesel enging mod- : Continuity should not exist.
els)
```



OK or NG

- OK >> GO TO 10. NG >> • Repair ha
 - >> 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 <u>LAN-253</u>, "ECM / COMBINATION METER INTERNAL CIRCUIT INSPECTION"

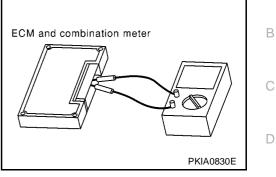
OK or NG

- OK >> Reconnect all connectors to perform "SELF-DIAG RESULTS" and "DATA MONITOR" for "ENGINE", "ABS", and "SMART ENTRANCE" displayed on CONSULT-II. Refer to <u>EC-150</u>, "DTC <u>U1000</u>, <u>U1001</u> CAN COMMUNICATION LINE" (QG ENGINE MODELS WITH EURO-OBD), <u>EC-663</u>, "DTC U1000, U1001 CAN COMMUNICATION LINE" (QG ENGINE MODELS WITHOUT EURO-OBD), <u>EC-1083</u>, "DTC U1000, U1001 CAN COMMUNICATION LINE" (QR ENGINE MODELS WITH EURO-OBD), <u>EC-1505</u>, "DTC U1000, U1001 CAN COMMUNICATION LINE" (QR ENGINE MODELS WITHOUT EURO-OBD) or <u>EC-1790</u>, "DTC U1000 CAN COMMUNICA-TION LINE" (YD ENGINE MODELS) for "ENGINE" and Refer to <u>BRC-33</u>, "CAN Communication <u>Circuit</u>" for "ABS". Refer to <u>BCS-40</u>, "CAN Communication Line Check" for "SMART ENTRANCE".
- NG >> Replace ECM and/or Combination meter.

Component Inspection 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	
ECM (Diesel engine models)	E11 – E10	Approx. 108 - 132
Combination meter	43 – 44	





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LAN-253

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System Description

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

Component Parts and Harness Connector Location

Under the passenger seat Bumper LH Passenger side view with lower instrument panel removed ESP/TCS/ABS ICC sensor (E53) Control unit (B109) ECM (F102 TCM H/M SAI Θ (Transmission control module) (F103) / 1 we and View with lower View with instrument panel Under the driver's seat instrument panel removed¹ center moved ICC unit (B9 Front Smart entrance control unit Tyre pressure monitoring N HE (M41) control unit (M96) Combination meter (M37)

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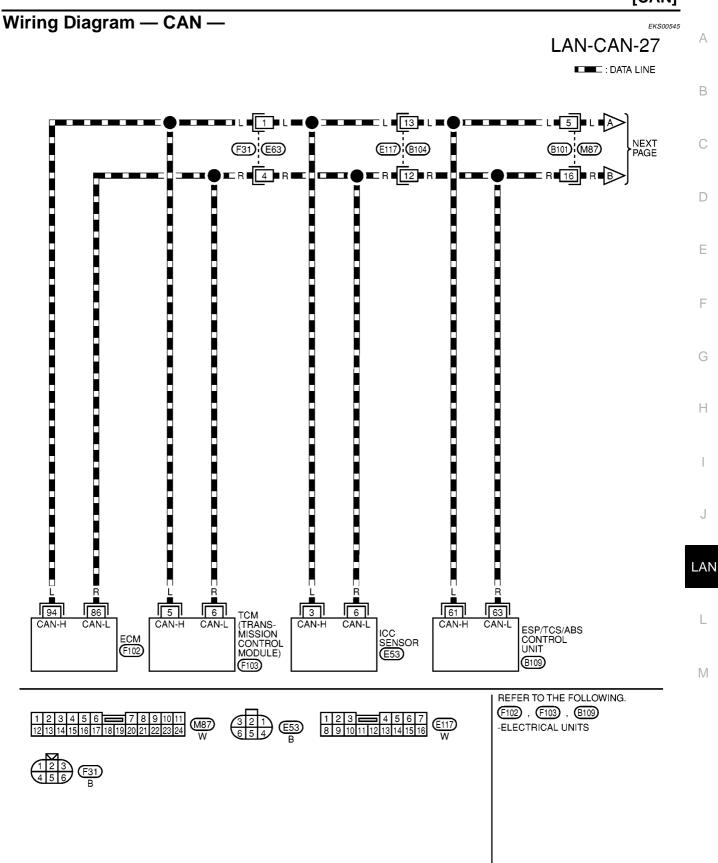
PFP:23710

EKS00543

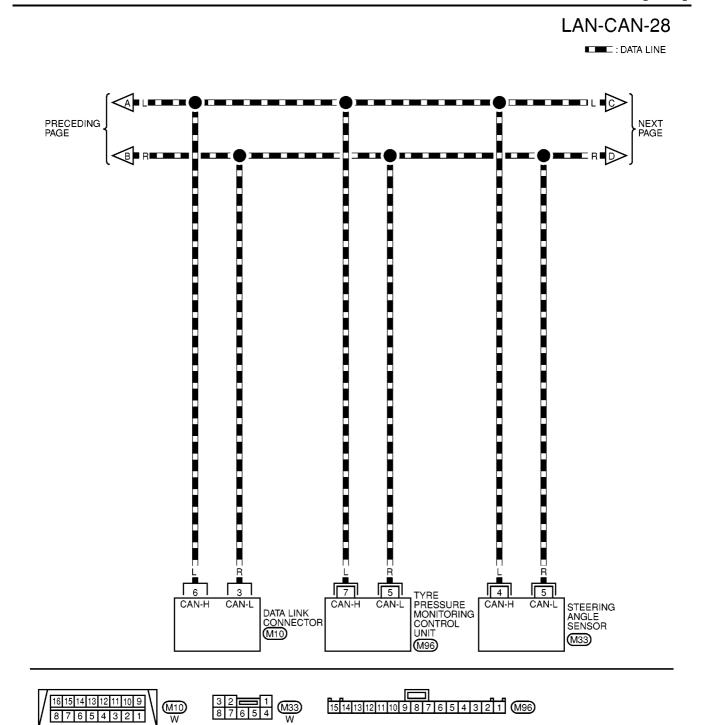
EKS00544



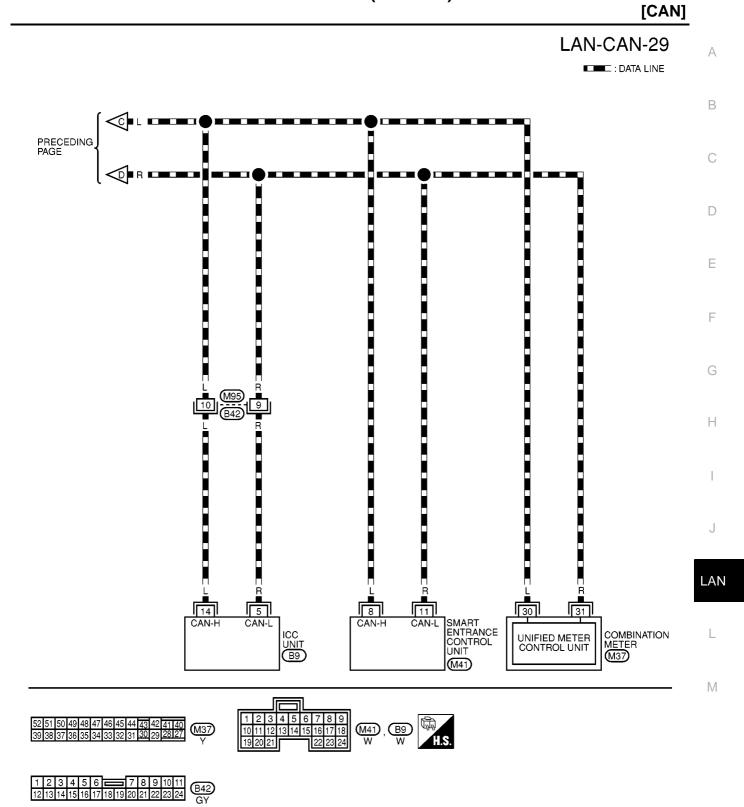
[CAN]



MKWA0237E







MKWA0239E

Work Flow

EKS00546

- 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 <u>EC-1083</u>, "DTC U1000, U1001 CAN COMMUNICATION LINE" (WITH EURO-OBD) or <u>EC-1505</u>, "DTC U1000, <u>U1001 CAN COMMUNICATION LINE</u>" (WITHOUT EURO-OBD) for "ENGINE" and Refer to <u>CVT-118</u>, "DTC U1000 CAN COMMUNICATION LINE" (EURO-OBD) or <u>CVT-201</u>, "CAN COMMUNICATION LINE" (ALL) for "CVT". Refer to <u>BRC-107</u>, "Inspection 15 CAN Communication Circuit, ESP/TCS/ABS Control <u>Unit and Steering Angle Sensor</u>" for "ABS". Refer to <u>WT-35</u>, "Inspection 4: CAN Communication Line" for "AIR PRESSURE MONITOR". Refer to <u>ACS-46</u>, "DTC 20 CAN COMM CIRCUIT" for "ICC". Refer to <u>BCS-40</u>, "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 <u>LAN-259, "CHECK SHEET"</u>

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 <u>LAN-260, "CHECK SHEET</u> <u>RESULTS (EXAMPLE)"</u>

CHECK SHEET

ENGINE	CAN COMM	CAN CIRC 1	-	CAN CIRC 2	Ι	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	I	-	_	CAN CIRC 5	CAN CIRC 6	_	-
AIR PRESSURE MONITOR	CAN COMM	CAN CIRC 1	_	-	-	_	-	_	-	_	CAN CIRC 2
cc	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	CAN CIRC 8	CAN CIRC 3	_	_	_	_	_
MART INTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2	_	_	-	_	_	_	_	CAN CIRC 3
symptoms:											
]
		(A H = - -		
	Attach copy ENGINE				Attach co CV1					l copy of IBS	
SE	LF-DIAG RE	SULTS		S	ELF-DIAG	RESULTS			SELF-DIA	G RESULT	S
AIR P	Attach copy RESSURE M				Attach co ICC					1 copy of ENTRANCE	
	LF-DIAG RE			S	ELF-DIAG					G RESULT	
	Attach copy				Attach co					l copy of	
	ENGINE DATA MONI				CVI DATA MC					BS MONITOR	
	Attach copy	, of			Attach co	to vac			Attach	1 copy of	
	RESSURE N	NONITOR			ICC	;			SMART E	INTRANCE	
I	DATA MONI	TOR			DATA MC	DNITOR			DATAI	MONITOR	

CHECK SHEET RESULTS (EXAMPLE)

ENGINE	CAN COMM	CAN CIRC 1	-	CAN CIRC 2	-	CAN CIRC 3	_	-	CAN CIRC 5	CAN CIRC 6	CAN
СVТ	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 CNC2	_	CAN CMC 3	—	-	CAN CNC 5	CAN CMC 6	CAN CINC 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	CAN	CAN	CAN	_	_	_	_	_	-	-	CAN CIRC 3
		CIRC 1	CIRC 2	·	· - · - · - · · · · · · · · · · · · · ·						
ase 2: Replace	• TCM	CAN				CAN CIBC 3			CAN CIBC 5	CAN CIBC 6	CAN
ase 2: Replace ENGINE	TCM CAN COMM CAM	CAN CIRC 1 CAN	– CAN	CAN CMC 2 -	 	CIRC 3 CAN			CAN CIRC 5 –	CAN CIRC 6 –	CAN CIRC 4 CAN
ENTRANCE ase 2: Replace ENGINE CVT ABS	TCM CAN COMM	CAN CIRC 1		-	 	CIRC 3	 		CIRC 5		CAN CIRC 4 CAN
ase 2: Replace ENGINE CVT ABS AIR PRESSURE	TCM CAN CAN CAN CAN CAN	CAN CIRC 1 CAN CIRC 1 CAN	– CAN CIRC 2 CAN	CAN CMC 2 - CAN CMC 3 -	_	CIRC 3 CAN CIRC 3			CIRC 5 — CAN	CIRC 6	CAN CIRC 2 CAN CIRC 2 -
ase 2: Replace ENGINE CVT ABS AIR PRESSURE MONITOR	TCM CAN COMM CAN CAN CAN CAN CAN	CAN CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN	– CAN CIRC 2 CAN	-	_	CIRC 3 CAN CIRC 3			CIRC 5 — CAN	CIRC 6	CAN CIRC 2 CAN CIRC 2 -
ase 2: Replace ENGINE CVT	TCM CAN CAN CAN CAN CAN CAN CAN CAN	CAN CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN	- CAN CIRC 2 CAN CIRC 2 - CAN	- CAN CINC 3 -		CIRC 3 CAN CIRC 3 — — CAN	_ _ _		CIRC 5 — CAN CIRC 6 —	CIRC 6 — — —	CAN CIRC 2 CAN CIRC 2
ase 2: Replace ENGINE CVT ABS AIR PRESSURE MONITOR ICC SMART	CAN CAN CAN CAN CAN CAN CAN CAN CAN CAN	CAN CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1	- CAN CIRC 2 CAN CIRC 2 - CAN CIRC 2 CAN	- CAN CMC 3 - CAN CMC 4 -	– – CAN CIRC 8	CIRC 3 CAN CIRC 3 - CAN CIRC 3 -	_ _ _		CIRC 5 CAN CIRC 6 	CIRC 6 	CAN CIRC 4 CAN CIRC 4 CAN CIRC 2 CAN CIRC 2
ase 2: Replace ENGINE CVT ABS AIR PRESSURE MONITOR ICC SMART	TCM CAN COMM CAN CAN COMM CAN COMM CAN COMM CAN COMM CAN COMM	CAN CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1	- CAN CIRC 2 CAN CIRC 2 - CAN CIRC 2 CAN CIRC 2 CAN CIRC 2	- CAN CINC 3 -	– – CAN CIRC 8	CIRC 3 CAN CIRC 3 — — CAN CIRC 3 — CAN CIRC 3	_ _ _		CIRC 5 — CAN CIRC 6 —	CIRC 6 — — —	CAN CIRC 2 CAN CIRC 2 CAN CIRC 2 CAN CIRC 3 CAN CIRC 3
ase 2: Replace ENGINE CVT ABS AIR PRESSURE MONITOR ICC SMART ENTRANCE	TCM CAN COMM CAN COMM CAN COMM CAN COMM CAN COMM CAN COMM CAN COMM	CAN CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1	CAN CIRC 2 CAN CIRC 2 CAN CIRC 2 CAN CIRC 2 CAN CIRC 2	- CAN CINC 3 - CAN CINC 4 - CAN CIRC 2 -	– – CAN CIRC 8 –	CIRC 3 CAN CIRC 3 — — CAN CIRC 3 — CAN CIRC 3	_ _ _	CIRC 5 - - - - - - - - -	CIRC 5 - CAN CIRC 6 - - CIRC 5 -	CIRC 6 	CAN CIRC 2 CAN CIRC 2 CAN CIRC 2 CAN CIRC 2 CAN CIRC 2 CAN CIRC 2
ase 2: Replace ENGINE CVT ABS AIR PRESSURE MONITOR ICC SMART ENTRANCE ENGINE CVT ABS	TCM CAN COMM CAN CAN CAN COMM CAN CAN CAN COMM CAN COMM CAN	CAN CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN	- CAN CIRC 2 CAN CIRC 2 - CAN CIRC 2 CAN CIRC 2 CAN CIRC 2	- CAN CMC 3 - CAN CMC 4 - CAN	– – CAN CIRC 8 –	CIRC 3 CAN CIRC 3 - CAN CIRC 3 CAN CIRC 3 CAN	_ _ _		CIRC 5 CAN CIRC 6 CAN CAN	CIRC 6 	CAN CIRC 2 CAN CIRC 2 CAN CIRC 2 CAN CIRC 2 CAN CIRC 2 CAN CIRC 2
ase 2: Replace ENGINE CVT ABS AIR PRESSURE MONITOR ICC SMART ENTRANCE	CAN CAN CAN CAN CAN CAN CAN CAN CAN CAN	CAN CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1	CAN CIRC 2 CAN CIRC 2 CAN CIRC 2 CAN CIRC 2 CAN CIRC 2 CAN CIRC 2 CAN	- CAN CMC 3 - CAN CMC 4 - CAN CIRC 2 - CAN CIRC 2 - CAN CIRC 3 -	 CAN CIRC 8 	CIRC 3 CAN CIRC 3 - CAN CIRC 3 - CAN CIRC 3 CAN CIRC 3 CAN CIRC 3 CAN CIRC 3 CAN CIRC 3 CAN CIRC 3	- - - - - - -	CIRC 5 	CIRC 5 - CAN CIRC 6 - - CAN CIRC 5 - CAN CIRC 5	CIRC 6 CAN CIRC 6 	CAN CIRC 2 CAN CIRC 2 CAN CIRC 2 CAN CIRC 2 CAN CIRC 2 CAN CIRC 2 CAN CIRC 2 CAN CIRC 2 CAN CIRC 2
ase 2: Replace ENGINE CVT ABS AIR PRESSURE MONITOR ICC SMART ENTRANCE ENGINE CVT ABS AIR PRESSURE	CAN CAN COMM CAN COMM CAN COMM CAN COMM CAN COMM CAN CAN CAN CAN CAN CAN CAN CAN CAN CAN	CAN CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN	CAN CIRC 2 CAN CIRC 2 CAN CIRC 2 CAN CIRC 2 CAN CIRC 2 CAN CIRC 2 CAN	- CAN CINC 3 - CAN CINC 4 - CAN CIRC 2 - CAN	 CAN CIRC 8 	CIRC 3 CAN CIRC 3 - CAN CIRC 3 - CAN CIRC 3 CAN CIRC 3 CAN CIRC 3	- - - - - - -	CIRC 5 	CIRC 5 - CAN CIRC 6 - - CAN CIRC 5 - CAN CIRC 5	CIRC 6 CAN CIRC 6 	CAN CIRC 2 CAN CIRC 2 C

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ENGINE	CAN COMM	CAN CIRC 1	-	CAN CIRC 2	_	CAN CINC 3	-	_	CAN CIRC 5	CAN CIRC 6	CAN CIRC 4
CVT	CAN COMM	CAN CIRC 1	CAN CIRC 2	-	_	CAN CINC 3	_	_	_		CAN CIRC 4
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 3	_	_	_	CAN CIRC 5	CAN CIRC 6	1	_
AIR PRESSURE MONITOR	CAN COMM	CAN CIRC 1	_	_	_	_	_	_	_	Ι	CAN CIRC 2
ICC	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	CAN CIRC 8	CAN CINC 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 CINC 2	CAN CINC 3	_	_	_	CAN CINC 5	CAN CINC 6	Ι	_
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	CAN	CAN	CAN	i	1						CAN

Case 4: Replace Tyre pressure monitoring control unit

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ENGINE	CAN	CAN	_	CAN	_	CAN	_	_	CAN	CAN	CAN
	COMM	CIRC 1		CIRC 2		CIRC 3			CIRC 5	CIRC 6	CIRC 4
сут	CAN	CAN	CAN	_	_	CAN	_	_	_	_	CAN
001	COMM	CIRC 1	CIRC 2			CIRC 3					CIRC 4
ABS	CAN	CAN	CAN	CAN	_	_	_	CAN	CAN	_	_
AD3	COMM	CIRC 1	CIRC 2	CIRC 3				CIRC 5	CIRC 6		
AIR PRESSURE MONITOR	CAN COMM	CAN CIRC 1	_	_	_	_	_	_	_	_	CAN CIRC 2
ICC	CAN	CAN	CAN	CAN	CAN	CAN	_	_	_	_	_
	COMM	CIRC 1	CIRC 2	CIRC 4	CIRC 8	CIRC 3					
SMART	CAN	CAN	CAN	_	_	_	_	_	_	_	CAN
ENTRANCE	COMM	CIRC 1	CIRC 2								CIRC 3

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ENGINE	CAN			CAN	_	CAN CIRC 3	_	_	CAN CINC 5	CAN CIRC 6	CAN
-) / -	COMM CAN	CIRC 1 CAN	CAN	CIRC 2		CIRC 3			UNKUS	CIRC 6	CIRC 4 CAN
CVT	COMM	CIRC 1	CIRC 2	_	-	CIRC 3	_	-	_	_	CIRC 4
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 3	-	-	_	CAN CIRC 5	CAN CINC 6	-	-
AIR PRESSURE MONITOR	CAN COMM	CAN CIRC 1	-	_	_	_	-	-	_	_	CAN CIRC 2
СС	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
NGINE	CAN	CAN	_	CAN	_	CAN	_	_	CAN	CAN	CAN
	COMM CAN	CIRC 1 CAN	CAN	CIRC 2		CIRC 3 CAN			CIRC 5	CIRC 6	CIRC 4 CAN
CVT	COMM	CIRC 1	CIRC 2	-	-	CIRC 3	—	-	-	_	CIRC 4
BS	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 3	_	-	_	CAN CIRC 5	CAN CIRC 6	-	-
NR PRESSURE MONITOR	CAN COMM	CAN CIRC 1	_	_	_	_	_	-	_	_	CAN CIRC 2
CC	CAN COMM	CAN CIRC 1	CAN CNC2	CAN CNC 4	CAN CNC 8	CAN CNC 3	_	_	_	_	_
MART	CAN	CAN	CAN		_		_				CAN
INTRANCE	COMM	CIRC 1	CIRC 2					 	 		
AND	COMM	CIRC 1	CIRC 2	CAN CIBC 2		CAN CIBC 3	_ 	 	CAN CIBC 5	CAN	
ENTRANCE	COMM	CIRC 1	unit	CAN CIRC 2		CIRC 3 CAN			CAN CIRC 5 –	CAN CIRC 6	CAN CIRC 4 CAN
ENTRANCE	Smart entra CAN CAN CAN CAN CAN CAN CAN	CIRC 1 ance control CAN CIRC 1 CAN CIRC 1 CAN	CIRC 2	CIRC 2 — CAN		CIRC 3			CIRC 5 - CAN		CAN CIRC 4 CAN
ENTRANCE ase 6: Replace ENGINE CVT ABS AIR PRESSURE	Smart entra CAN COMM CAN CAN CAN	CIRC 1 ance control CAN CIRC 1 CAN CIRC 1	Unit	CIRC 2 —		CIRC 3 CAN	_ _ _ _ _ _		CIRC 5		CAN CIRC CAN CIRC - CAN
INTRANCE	COMM Smart entra CAN COMM CAN CAN COMM CAN CAN CAN CAN	CIRC 1 ance control CAN CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN	CIRC 2 unit CAN CIRC 2 CAN CIRC 2 - CAN	CIRC 2 CAN CIRC 3 - CAN		CIRC 3 CAN CIRC 3 — — CAN			CIRC 5 - CAN		CAN CIRC 4 CAN CIRC 4 - CAN
AR AR AR AR AR AR AR AR AR AR AR AR AR A	COMM Smart entra CAN CAN CAN CAN CAN CAN CAN CAN CAN CAN	CIRC 1 ance control CAN CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN	CIRC 2	CIRC 2 — CAN CIRC 3 —		CIRC 3 CAN CIRC 3 —		- CAN CIRC 5 -	CIRC 5 - CAN	CIRC 6 — — —	CAN CIRC 4 CAN CIRC 4 CAN CIRC 2 CAN
INTRANCE	COMM Smart entra CAN COMM CAN COMM CAN COMM CAN COMM CAN COMM	CIRC 1 ance control CAN CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1	CIRC 2	CIRC 2 CAN CIRC 3 - CAN	- - - CAN CIRC 8	CIRC 3 CAN CIRC 3 - CAN CIRC 3		- CAN CIRC 5 -	CIRC 5 - CAN	CIRC 6 — — —	CAN CIRC CAN CIRC CAN CIRC CAN CIRC
ASS 6: Replace	COMM Smart entra CAN COMM CAN CAN CAN CAN CAN CAN CAN CAN CAN CAN	CIRC 1 ance control CAN CIRC 1 CAN CIRC 1	CIRC 2	CIRC 2 	- - - CAN CIRC 8	CIRC 3 CAN CIRC 3 — — CAN CIRC 3 — CAN CIRC 3		- CAN CIRC 5 -	CIRC 5 CAN CIRC 6 CAN	CIRC 6 	CAN CIRC 4 CAN CIRC 4 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1
ENTRANCE ase 6: Replace ENGINE CVT ABS AIR PRESSURE MONITOR CC ENTRANCE ENGINE	COMM CAN CAN CAN CAN CAN COMM CAN CAN COMM CAN CAN CAN CAN CAN CAN CAN	CIRC 1 ance control CAN CIRC 1 CAN CIRC 1	CIRC 2 unit CAN CIRC 2 CAN CIRC 2 CAN CIRC 2 CAN CIRC 2 CAN CIRC 2 CAN CIRC 2	CIRC 2 CAN CIRC 3 CAN CIRC 4 	- - - CAN CIRC 8 -	CIRC 3 CAN CIRC 3 — CAN CIRC 3 — CAN CIRC 3 CAN		- CAN CIRC 5 -	CIRC 5 CAN CIRC 6 	CIRC 6 	CAN CIRC - CAN CIRC - CAN CIRC - CAN CIRC - CAN CIRC - CAN CIRC -
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PRESSURE MONITOR CAN	
ABS CAN CAN <td>CAN CINC 4 CAN CINC 4</td>	CAN CINC 4 CAN CINC 4
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CC CAN	CAN CIRC 2
MART CAN CAN <td>_</td>	_
	CAN CIRC 3
CVT CAN CAN <td></td>	
CVT CAN CAN <td>CAN CINC 4</td>	CAN CINC 4
ABS CAN CAN CAN CAN CAN CAN CAN CIRC 5 CIRC 6 - AIR PRESSURE CAN CAN CAN CAN CAN CIRC 6 -	CAN CINC 4
AIR PRESSURE MONITOR CAN COMM CAN CIRC1 CAN CIRC1 CAN CIRC2 CAN CAN CAN CAN CAN CIRC1 CAN CIRC2 CAN CIRC3 CAN CAN CIRC3 CAN CAN <t< td=""><td>_</td></t<>	_
CC CAN	CAN CIRC 2
SMART ENTRANCE CAN COMM CAN CIRC 1 CAN CIRC 2 CAN CIRC 2 -	-
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ENGINE	CAN COMM	CAN CIRC 1	-	CAN CIRC 2	-	CAN CIRC 3	_	-	CAN CINC 5	CAN CINC 6	CAN CINC 4
CVT	CAN COMM	CAN CIRC 1	CAN CIRC 2		_	CAN CIRC 3	_	_	_	_	CAN CINC 4
ABS	CAN	CAN CIRC 1	CAN CIRC 2	CAN CIRC 3	_	-	_	CAN CIRC 5	CAN CINC 6	_	-
AIR PRESSURE MONITOR	CAN COMM	CAN CIRC 1	_		_	_	_	-		_	CAN CINC 2
	CAN COMM	CAN CIRC 1	CAN CINC 2	CAN CINC 4	CAN CMC 8	CAN CINC 3	_	_	_	_	_
SMART ENTRANCE	CAN	CAN CIRC 1	CAN CAN CINC 2				_	_	_	_	CAN CIRC 3
ase 12 ENGINE	CAN COMM	CAN CIRC 1	_	CAN	_	CAN	_	_	CAN	CAN CNC 6	CAN CINC 4
CVT	CAN	CAN	CAN	CIRC 2	_	CIRC 3 CAN	_	_	CIRC 5		CAN CAN CINC 4
ABS	COMM CAN	CIRC 1 CAN	CIRC 2 CAN	CAN		CIRC 3	_	CAN	CAN	_	
AIR PRESSURE	COMM CAN COMM	CIRC 1 CAN CIRC 1	CIRC 2	CIRC 3	_	_	_	CIRC 5	CIRC 6	_	CAN CINC 2
MONITOR	CAN	CAN	CAN	CAN	CAN	CAN	_				
SMART	COMM CAN	CIRC 1 CAN	CIRC 2 CAN	CIRC 4	CIRC 8	CIRC 3					CAN
ENTRANCE	COMM	CIRC 1	CINC 2								CIRC 3
ase 13 ENGINE	CAN	·		CAN CINC 2		CAN CINC 3			CAN CMC 5	CAN CINC 6	CAN CINC 2
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ENGINE CVT	CAN COMM CAN COMM CAN	CAN CMC 1 CAN CIRC 1 CAN		– CAN	- - - -	CAN		CAN	– CAN	CAN CMC 6 - -	CAN CIRC 4 - CAN
ENGINE CVT ABS AIR PRESSURE	CAN COMM CAN CAN CAN COMM CAN	CAN CMC 1 CAN CIRC 1 CAN CIRC 1 CAN	- CAN CIMC 2 CAN CIMC 2	– CAN CIRC 3 – CAN	- - - - - CAN CIRC 8	CAN		CAN	– CAN	CAN CMC 6 - - -	CAN CIRC 4 — CAN
ENGINE CVT ABS AIR PRESSURE MONITOR	CAN COMM CAN COMM CAN COMM CAN CAN	CAN CINC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN	- CARI CINC 2	– CAN CIRC 3 –	- - CAN	CAN CIRC 3 — — CAN		CAN	– CAN		CAN CIRC 4 - CAN CIRC 2 - CAN
ENGINE CVT ABS AIR PRESSURE MONITOR ICC SMART	CAN COMM CAN CAN COMM CAN COMM CAN CAN CAN CAN CAN CAN CAN	CAN CMC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1	- CAN CINC 2 CAN CINC 2 - CAN CINC 2 CAN	CAN CIRC 3 CAN CIRC 4 -	- - CAN	CAN CIRC 3 — — CAN CIRC 3 —		CAN	- CAN CIRC 6 - -	_ _ _ _	CAN CIRC 4 CAN CIRC 2 CAN CIRC 3
ENGINE CVT ABS AIR PRESSURE MONITOR ICC SMART ENTRANCE	CAN COMM CAN COMM CAN COMM CAN COMM CAN COMM	CAN CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1	- CAN CIMC 2 CAN CIMC 2 - CAN CIMC 2 CAN CIMC 2	– CAN CIRC 3 – CAN	- - CAN	CAN CIRC 3 - CAN CIRC 3 - CAN CIRC 3		CAN	– CAN	CAN CMC 6 - - - - - - - - - - - - -	CAN CIRC 4 CAN CIRC 2 CAN CIRC 3 CAN CIRC 3
ENGINE CVT ABS AIR PRESSURE MONITOR ICC SMART ENTRANCE	CAN COMM CAN CAN CAN CAN CAN CAN CAN CAN COMM CAN COMM CAN COMM	CAN CMC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1	- CAN CIMC 2 CAN CIMC 2 - CAN CIMC 2 CAN CIMC 2	CAN CIRC 3 CAN CIRC 4 - CAN CIRC 4 -	- - CAN	CAN CIRC 3 — CAN CIRC 3 —	- - -	CAN CIRC 5 - - -	CAN CIRC 6 - - - CAN CIRC 5 -	_ _ _ _ _ _ 	CAN CIRC 4 CAN CIRC 2 CAN CIRC 3 CAN CIRC 4 CAN CIRC 4 CAN
ENGINE CVT ABS AIR PRESSURE MONITOR ICC SMART ENTRANCE ase 14 ENGINE CVT	CAN COMM CAN CAN CAN CAN CAN CAN CAN CAN CAN COMM CAN CAN	CAN CMC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1	- CAN CIMC 2 CAN CIMC 2 - CAN CIMC 2 CAN CIMC 2	CAN CIRC 3 CAN CIRC 4 -	– CAN CIRC 8 –	CAN CIRC 3 — — CAN CIRC 3 — CAN CIRC 3 CAN	- - - -	CAN	CAN CIRC 6 - - - CAN CIRC 5	_ _ _ _ _ _ _ _ _ _ 	CAN CIRC 4 CAN CIRC 2 CAN CIRC 3
ENGINE CVT ABS AIR PRESSURE MONITOR ICC SMART ENTRANCE ase 14 ENGINE CVT ABS AIR PRESSURE	CAN COMM CAN CAN CAN CAN CAN CAN CAN CAN COMM CAN CAN CAN CAN CAN CAN	CAN CMC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1	- CAN CINC 2 CAN CINC 2 - CAN CINC 2 CAN CINC 2 CAN CINC 2 CAN CINC 2	CAN CIRC 3 CAN CIRC 4 - CAN CIRC 4 - CAN CIRC 2 CAN CAN	- CAN CIRC 8 -	CAN CIRC 3 — CAN CIRC 3 — CAN CIRC 3 CAN CIRC 3 CAN CIRC 3	- - - -	CAN CIRC 5 - - - - - - - - - - - - -	CAN CIRC 6 - - - - CAN CIRC 5 - CAN		CAN CIRC 4 - CAN CIRC 2 - CAN CIRC 3 - CAN CIRC 4 CAN CIRC 4 CAN CIRC 4 CAN
ENGINE CVT ABS AIR PRESSURE MONITOR ICC SMART ENTRANCE ase 14 ENGINE	CAN COMM CAN CAN CAN CAN CAN CAN CAN CAN CAN CAN	CAN CMC 1 CAN CIRC 1	- CAN CIMC 2 CAN CIMC 2 - CAN CIMC 2 CAN CIMC 2 CAN CIMC 2 CAN CIMC 2 CAN CIMC 2 CAN CIMC 2	CAN CIRC 3 CAN CIRC 4 CIRC 4 CIRC 4 CIRC 2 CAN CIRC 2 CAN CIRC 3 CAN	- CAN CIRC 8 - - - - - - - - - - CAN	CAN CIRC 3 — — CAN CIRC 3 — — — — — — — — — — — — — — — — — — —	- - - -	CAN CIRC 5 - - - - - - - - - - - - -	CAN CIRC 6 - - - - CAN CIRC 5 - CAN		CAN CIRC 4 - CAN CIRC 2 - CAN CIRC 3 - CAN CIRC 4 CAN CIRC 4 CAN CIRC 4 CAN
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ENGINE	CAN COMM	CAN CIRC 1	_	CAN CIRC 2	_	CAN CIRC 3	_	_	CAN CIRC 5	CAN CIRC 6	CAN CIRC 4
жт	CAN COMM	CAN CIRC 1	CAN CIRC 2	-	_	CAN CIRC 3	-	_	-	_	CAN CIRC 4
BS	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 3	_	-	_	CAN CIRC 5	CAN CIRC 6	_	-
IR RESSURE IONITOR	CAN COMM	CAN CIRC 1	_	_	_	_	_	-	_	-	CAN CIRC 2
cc	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	CAN CIMC 8	CAN CIRC 3	_	_	_	_	_
MART NTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2	_	_	_	_	_	_	_	CAN CIRC 3
se 16	CAN	CAN		CAN					CAN	CAN	CAN
NGINE		CAN CIRC 1 CAN	- CAN	CIRC 2	_	CAN CMC 3	_	_	CIRC 5	CIRC 6	CIRC 4 CAN
VT	COMM	CIRC 1	CIRC 2	-	_	CAN CINC 3	-	-	-	-	CAN CIRC 4
BS	CAN COMM	CAN CINC 1	CAN CMC 2	CAN CMC 3	_	_	-	CAN CINC 5	CAN CINC 6	_	_
IR RESSURE IONITOR	CAN COMM	CAN CIRC 1	_	_	_	_	-	-	_	_	CAN CIRC 2
				CAN	CAN	ÇAN					_
	CAN COMM	CAN CIRC 1	CAN CIRC 2	CIRC 4	CIRC 8	CILC 3	-	-	-	_	
DC MART NTRANCE			CIRC 2 CAN CIRC 2	CIRC 4 —	CIRC 8 	CM/C 3 — —	-	 	_ 		CAN CIRC 3
CC MART INTRANCE	COMM CAN COMM	CIRC 1 CAN CIRC 1 CAN CAN CIRC 1	CIRC 2 CAN CIRC 2		CIRC 8	CMC 3 — CAN CIRC 3	_ 		CAN CIRC 5	CAN CIRC 6	CIRC 3
CC SMART ENTRANCE use 17 SNGINE	COMM CAN COMM CAN CAN CAN COMM	CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1	CIRC 2 CAN CIRC 2 	CIRC 4 – CAN CIRC 2 –	CIRC 8 	CAN CIRC 3 CAN CIRC 3 CAN CIRC 3			CIRC 5	CIRC 6	CIRC 3 CAN CIRC 4 CAN CIRC 4
CC SMART ENTRANCE ase 17 ENGINE CVT	COMM CAN COMM CAN CAN CAN CAN CAN CAN COMM	CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1	CIRC 2 CAN CIRC 2 - CAN	CIRC 4 — — —	CIRC 8 	CAN CAN CIRC 3 CAN	_ 				CIRC 3 CAN CIRC 4 CAN CIRC 4 CIRC 4 -
CC SMART ENTRANCE ase 17 ENGINE CVT ABS NR PRESSURE	COMM CAN COMM CAN CAN CAN CAN COMM CAN CAN COMM	CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1	CIRC 2 CAN CIRC 2 CAN CIRC 2 CAN CIRC 2 CAN CIRC 2 CAN CIRC 2	CIRC 4 — CAN CIRC 2 — CAN CIRC 3 —	CIRC 8 — — — — — — — —	CAN CIRC 3 CAN CIRC 3 CAN CIRC 3 -			CIRC 5 - CAN	CIRC 6	CIRC 3 CAN CIRC 4 CAN CIRC 4
CC SMART ENTRANCE ase 17 ENGINE CVT ABS AIR PRESSURE MONITOR CC	COMM CAN COMM CAN CAN CAN COMM CAN COMM CAN COMM CAN COMM	CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1	CIRC 2 CAN CIRC 2 CAN CIRC 2 CAN CIRC 2 CAN CIRC 2 CAN CIRC 2	CIRC 4 – CAN CIRC 2 – CAN	CIRC 8 	CAN CIRC 3 CAN CIRC 3 CAN CIRC 3			CIRC 5 - CAN	CIRC 6	CIRC 3 CAN CIRC 4 CAN CIRC 4 CAN CIRC 4 CAN CIRC 2 CAN CIRC 2 CAN CIRC 2
CC SMART ENTRANCE ase 17 ENGINE CVT ABS AIR PRESSURE MONITOR CC SMART	COMM CAN COMM CAN CAN CAN COMM CAN COMM CAN COMM CAN	CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN	CIRC 2 CAN CIRC 2 CAN CIRC 2 CAN CIRC 2 CAN CIRC 2 CAN	CIRC 4 – CAN CIRC 2 – CAN CIRC 3 – CAN	CIRC 8 	CAN CIRC 3 CAN CIRC 3 CAN CIRC 3 - - CAN	 	- - - CAN CIRC 5 -	CIRC 5 — CAN CIRC 6 —	CIRC 6 — — —	CIRC 3 CAN CIRC 4 CAN CIRC 4 CAN CIRC 4 - CAN CIRC 2
CC SMART ENTRANCE ase 17 ENGINE CVT ABS AIR PRESSURE MONITOR CC SMART ENTRANCE	COMM CAN COMM CAN COMM CAN COMM CAN COMM CAN COMM CAN COMM CAN COMM	CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1	CIRC 2 CAN CIRC 2 CAN CIRC 2 CAN CIRC 2 CAN CIRC 2 CAN CIRC 2 CAN CIRC 2 CAN	CIRC 4 - CAN CIRC 2 - CAN CIRC 3 - CAN CIRC 4 - CAN CIRC 4	CIRC 8 _ _ _ _ _ _ _ _ _ _ _ _ _	CAN CIRC 3 CAN CIRC 3 CAN CIRC 3 - CAN CIRC 3 - CAN CIRC 3 -	- - - - - -		CIRC 5 — CAN CIRC 6 — — — —	CIRC 6 - - - -	CIRC 3 CAN CIRC 4 CAN CIRC 4 CAN CIRC 4 CAN CIRC 2 CAN CIRC 3
CC SMART ENTRANCE Ase 17 ENGINE CVT ABS ANR PRESSURE MONITOR CC SMART ENTRANCE	COMM CAN COMM CAN CAN CAN COMM CAN COMM CAN COMM CAN COMM	CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1	CIRC 2 CAN CIRC 2 CAN CIRC 2 CAN CIRC 2 CAN CIRC 2 CAN CIRC 2 CAN CIRC 2 CAN CIRC 2	CIRC 4 – CAN CIRC 2 – CAN CIRC 3 – CAN	CIRC 8 _ _ _ _ _ _ _ _ _ _ _ _ _	CAN CIRC 3 CAN CIRC 3 CAN CIRC 3 - CAN CIRC 3 - CAN CIRC 3	- - - - - -		CIRC 5 — CAN CIRC 6 —	CIRC 6 — — —	CIRC 3
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NGINE	CAN COMM	CAN CIRC 1	_	CAN CIRC 2	-	CAN CIRC 3	_	_	CAN CNC 5	CAN CIRC 6	CAN CIRC 4
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BS	CAN	CAN	CAN	CAN	_	- CIRC 3	_	CAN	CAN	_	- URC 4
NR PRESSURE	COMM CAN COMM	CIRC 1 CAN CIRC 1	CIRC 2	CIRC 3	_	_	_	CIRC 5	CNC 6 —		CAN CIRC 2
<u>IONITOR</u> CC	CAN		CAN CINC 2	CAN CINC 4	CAN CNC 8	CAN CNC 3	_	_	_	_	-
MART NTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2	_	-	-	_	-	_	_	CAN CIRC 3
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use 20											
NGINE	CAN COMM	CAN CIRC 1	_	CAN CIRC 2	_	CAN CIRC 3	_	_	CAN CIRC 5	CAN CINC 6	CAN CIRC 4
VT	CAN COMM	CAN CIRC 1	CAN CIRC 2	_	_	CAN CIRC 3	-	-	-	-	CAN CIRC 4
BS	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 3	-	-	_	CAN CIRC 5	CAN CIRC 6	_	-
NR PRESSURE MONITOR	CAN COMM	CAN CIRC 1	_	_	_	_	_	_	_	_	CAN CIRC 2
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use 21											
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NOTE:

If "NG" is displayed on "CAN COMM" for the diagnosed control unit, replace the control unit.

[CAN]

LAN-266

[CAN]	
INSPECTION	
Proceed trouble diagnosis according to the check sheet results (example).	А
Case 1:Replace ECM.	
Case 2:Replace TCM.	
Case 3:Replace ESP/TCS/ABS control unit.	В
Case 4:Replace Tyre pressure monitoring control unit.	
Case 5:Replace ICC unit.	
Case 6:Replace Smart entrance control unit.	C
Case 7:Check Harness between TCM and ICC sensor. Refer to LAN-267, "Circuit Check Between TCM and	С
ICC Sensor"	
Case 8:Check Harness between ICC sensor and ESP/TCS/ABS control unit. Refer to <u>LAN-268</u> , "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	D
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."	E
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	F
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"	0
Case 15:Check ICC sensor Circuit. Refer to LAN-273, "ICC Sensor Circuit Check"	G
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 <u>LAN-274</u> , "Tyre Pressure Monitoring Control Unit Circuit Check"	Н
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"	1
Case 20:Check Smart entrance control unit Circuit. Refer to LAN-276, "Smart Entrance Control Unit Circuit	1
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"	J
Circuit Check Between TCM and ICC Sensor	
1. CHECK CONNECTOR	
T: CHECK CONNECTOR	LAN
1. Turn ignition switch OFF.	
2. Disconnect the negative battery terminal.	1
3. Check following terminals and connector for damage, bend and loose connection. (control module-side, sensor-side and harness-side)	L
,	
• TCM.	M
ICC sensor.	
Between TCM and ICC sensor.	

OK or NG

OK >> GO TO 2.

NG >> Repair terminal or connector.

- 1. Disconnect TCM connector and harness connector F31.
- 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)
 - 6(R) 4(R)
- : Continuity should exist.
- : Continuity should exist.

OK or NG

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

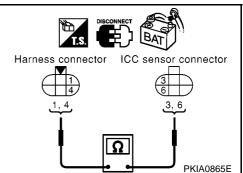
3. CHECK HARNESS FOR OPEN CIRCUIT

- 1. Disconnect ICC sensor connector.
- 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)
 - 4(R) 6(R)



<u>OK or NG</u>

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 COMMUNICA-



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TCM connector

5,6

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CONNECTOR

TION 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 COM-MUNICATION 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 1. CHECK CONNECTOR

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.

Harness connector

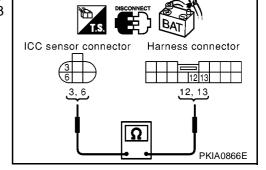
PKIA0864E

- Disconnect ICC sensor connector and harness connector E117. 1.
- 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)
 - 6(R) 12(R)
- : Continuity should exist.
- : Continuity should exist.

OK or NG

OK >> GO TO 3.

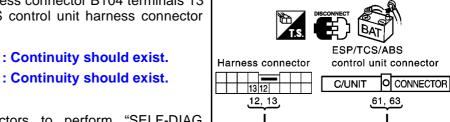
NG >> Repair harness.



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$\mathbf{3}$. 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)
 - 12(R) 63(R)



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 COMMUNICA-TION 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 COM-MUNICATION 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 <u>BCS-40, "CAN Communication Line Check"</u> for "SMART ENTRANCE".

NG >> Repair harness.

Circuit Check Between ESP/TCS/ABS Control Unit and Tyre Pressure Monitoring Control Unit EKS00549

1. CHECK CONNECTOR

- Turn ignition switch OFF. 1.
- 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.

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PKIA0868E

- 1. Disconnect ESP/TCS/ABS control unit connector and harness connector B101.
- 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.
- 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) 16(R) - 5(R)
- : Continuity should exist.

: 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 COMMUNICA-

TION LINE" (WITH EURO-OBD) or EC-1505, "DTC U1000, U1001 CAN COMMUNICATION LINE" (WITHOUT EURO-OBD) for "ENGINE" and Refer to <u>CVT-118</u>, "DTC U1000 CAN COM-<u>MUNICATION LINE</u>" (EURO-OBD) or <u>CVT-201</u>, "CAN COMMUNICATION LINE" (ALL) for "CVT". Refer to <u>BRC-107</u>, "Inspection 15 CAN Communication Circuit, ESP/TCS/ABS Control Unit and Steering Angle Sensor" for "ABS". Refer to <u>WT-35</u>, "Inspection 4: CAN Communication Line" for "AIR PRESSURE MONITOR". Refer to <u>ACS-46</u>, "DTC 20 CAN COMM CIRCUIT" for "ICC". Refer to <u>BCS-40</u>, "CAN Communication Line Check" for "SMART ENTRANCE".

NG >> Repair harness.

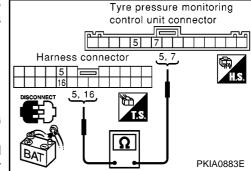
Circuit Check Between Tyre Pressure Monitoring Control Unit and Steering Angle Sensor

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.



ESP/TCS/ABS

O CONNECTOR

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61, 63

control unit

connector

C/UNIT

Harness connector

5, 16

16

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Steering angle

4 5

sensor connector

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Tyre pressure monitoring

control unit connector

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2. CHECK HARNESS FOR OPEN CIRCUIT

- 1. Disconnect tyre pressure monitoring control unit connector and steering angle sensor connector.
- Check continuity between tyre pressure monitoring control unit 2. harness connector M96 terminals 7 (L), 5 (R) and steering angle sensor harness connector M33 terminals 4 (L), 5 (R).
 - 7(L) 4(L)
 - 5(R) 5(R)
- : Continuity should exist.
- - : Continuity should exist.

OK or NG

OK >> Reconnect all connectors to perform "SELF-DIAG RESULTS" and "DATA MONITOR" for "ENGINE", Ω "CVT", "ABS", "AIR PRESSURE MONITOR", "ICC", and PKIA0884E "SMART ENTRANCE" displayed on CONSULT-II. Refer to EC-1083, "DTC U1000, U1001 CAN COMMUNICA-TION 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 COM-MUNICATION LINE" (EURO-OBD) or CVT-201, "CAN COMMUNICATION LINE" (ALL) for "CVT". Refer to <u>BRC-107</u>, "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

- 1. CHECK CONNECTOR
- Turn ignition switch OFF. 1.
- 2. Disconnect the negative battery terminal.
- Check following terminals and connector for damage, bend and loose connection. (control unit-side, sen-3 sor-side and harness-side)
- ICC unit.
- Steering angle sensor.
- Between ICC unit and steering angle sensor.

OK or NG

OK >> GO TO 2.

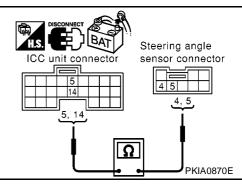
NG >> Repair terminal or connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

- Disconnect ICC unit connector and steering angle sensor connector. 1.
- Check continuity between ICC unit harness connector B9 termi-2. nals 14 (L), 5 (R) and steering angle sensor harness connector M33 terminals 4 (L), 5 (R).
 - 14(L) 4(L)
- 5(R) 5(R)
- : Continuity should exist. : 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 COMMUNICA-



TION 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 COM-MUNICATION 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

LAN-271

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

NG >> Repair harness.

Circuit Check Between ICC Unit and Smart Entrance Control Unit

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[CAN]

- CHECK CONNECTOR
 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.

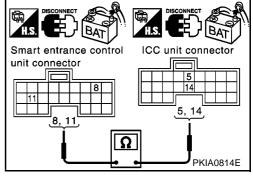
2. CHECK HARNESS FOR OPEN CIRCUIT

- 1. Disconnect ICC unit connector and smart entrance control unit connector.
- 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) 11(R) - 5(R)

: Continuity should exist. : 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 COMMUNICA-



TION 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 COM-MUNICATION 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

1. CHECK CONNECTOR

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- 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.



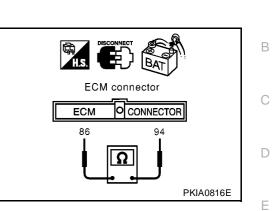
- 1. Disconnect ECM connector.
- 2. Check resistance between ECM harness connector F102 terminals 94(L) and 86(R).

94(L) - 86(R)

: Approx. 108 – 132Ω

OK or NG

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



TCM connector

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CONNECTOR

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TCM Circuit Check

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

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.

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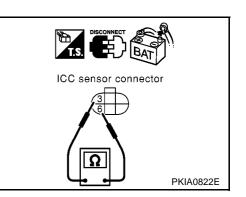
$\overline{2}$. CHECK HARNESS FOR OPEN CIRCUIT

- 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

1. CHECK CONNECTOR

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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

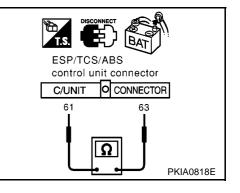
- 1. Disconnect ESP/TCS/ABS control unit connector.
- 2. Check resistance between ESP/TCS/ABS control unit harness connector B109 terminals 61(L) and 63(R).

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

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.

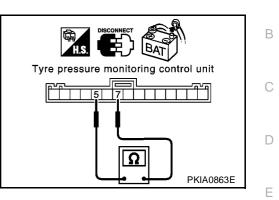
$\overline{2}$. CHECK HARNESS FOR OPEN CIRCUIT

- 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).

: 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

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. (sensorside and harness-side)

OK or NG

OK >> GO TO 2. NG >> Repair ter

G >> 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.

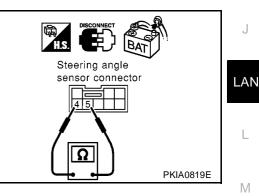


1. CHECK CONNECTOR

- 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.



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$\overline{2}$. CHECK HARNESS FOR OPEN CIRCUIT

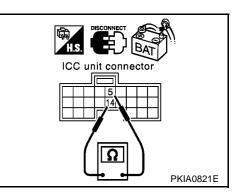
- 1. Disconnect ICC unit connector.
- 2. Check resistance between ICC unit harness connector B9 terminals 14(L) and 5(R).

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.



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Smart Entrance Control Unit Circuit Check

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

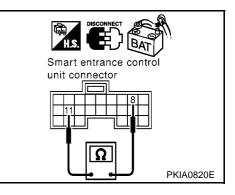
- 1. Disconnect smart entrance control unit connector.
- 2. Check resistance between smart entrance control unit harness connector M41 terminals 8(L) and 11(R).

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.



EKS0054L

Combination Meter Circuit Check

1. CHECK CONNECTOR

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

OK or NG

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

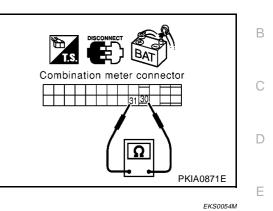
- 1. Disconnect combination meter connector.
- 2. Check resistance between combination meter harness connector M37 terminals 30(L) and 31(R).

30(L) - 31(R)

: Approx. 108 – 132 Ω

OK or NG

- OK >> Replace combination meter.
- NG >> Repair harness between smart entrance control unit and combination meter.



CAN Communication Circuit Check

1. CHECK CONNECTOR

1.	Turn ignition switch OFF.	F
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)	G
•	Combination meter.	
•	Smart entrance control unit.	Н
•	ICC unit.	
•	Steering angle sensor.	
•	Tyre pressure monitoring control unit.	
•	ESP/TCS/ABS control unit.	
•	ICC sensor.	
•	TCM.	J
•	ECM.	
•	Between ICC unit and ECM.	LAN
Ok	K or NG	L / (1
-	νK >> GO TO 2.	
N	G >> Repair terminal or connector.	L

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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.
- 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

- >> 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.

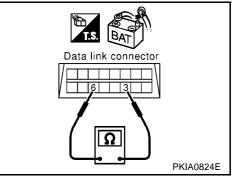
- 6(L) ground
- 3(R) ground

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

OK or NG

NG

- OK >> GO TO 4.
 - >> 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.



Data link connector

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4. CHECK HARNESS FOR SHORT CIRCUIT

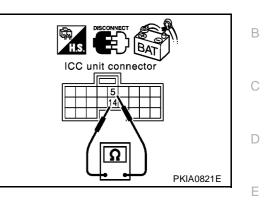
- 1. Disconnect ICC unit connector.
- 2. Check continuity between ICC unit harness connector B9 terminals 14 (L) and 5(R).

14(L) - 5(R)

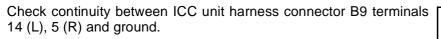
: Continuity should not exist.

OK or NG

- OK >> GO TO 5.
- NG >> Repair harness between ICC unit and harness connector B42.



5. CHECK HARNESS FOR SHORT CIRCUIT



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

- Disconnect ESP/TCS/ABS control unit connector and harness connector B104. 1.
- Check continuity between ESP/TCS/ABS control unit harness 2. connector B109 terminals 61 (L) and 63(R).

: Continuity should not exist.

OK or NG

OK >> GO TO 7. NG

61(L) - 63(R)

- >> 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.

- : Continuity should not exist.
- 63(R) ground

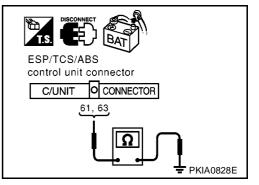
: Continuity should not exist.

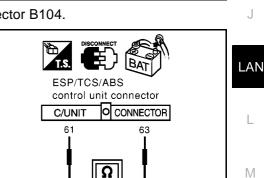
OK or NG

NG

OK >> GO TO 8.

- >> Repair harness between ESP/TCS/ABS control unit and harness connector B101.
 - Repair harness between harness connector B104 and harness connector B101.





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- 61(L) ground

8. CHECK HARNESS FOR SHORT CIRCUIT

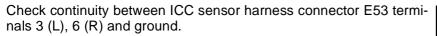
- 1. Disconnect ICC sensor connector and harness connector E63.
- 2. Check continuity between ICC sensor harness connector E53 terminals 3 (L) and 6(R).
 - 3(L) 6(R)

: 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



- 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

- Disconnect ECM connector and TCM connector. 1.
- 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.

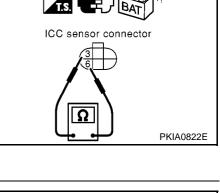
11. CHECK HARNESS FOR SHORT CIRCUIT

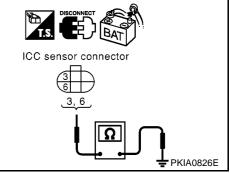
Check continuity between ECM harness connector F102 terminals 94 (L), 86 (R) and ground.

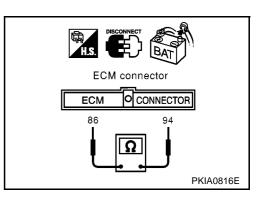
- 94(L) ground 86(R) – ground
- : Continuity should not exist.
- : Continuity should not exist.

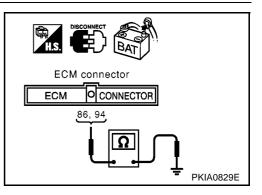
OK or NG

- OK >> GO TO 12.
- >> Repair harness between ECM and harness connector NG F31.
 - Repair harness between TCM and harness connector F31.









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12. ECM / COMBINATION METER INTERNAL CIRCUIT INSPECTION

Check components inspection. Refer to <u>LAN-281, "ECM / COMBINATION METER INTERNAL CIRCUIT</u> <u>INSPECTION"</u>

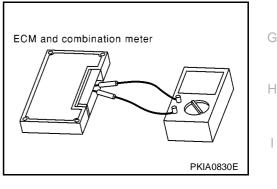
OK or NG

- 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 <u>EC-1083</u>, "<u>DTC U1000</u>, <u>U1001 CAN COMMUNICATION LINE</u>" (WITH URD-OBD) or <u>EC-1505</u>, "<u>DTC U1000</u>, <u>U1001 CAN COMMUNICATION LINE</u>" (WITH-OUT EURO-OBD) for "ENGINE" and Refer to <u>CVT-118</u>, "<u>DTC U1000 CAN COMMUNICATION LINE</u>" (EURO-OBD) or <u>CVT-201</u>, "<u>CAN COMMUNICATION LINE</u>" (ALL) for "CVT". Refer to <u>BRC-107</u>, "Inspection 15 CAN Communication Circuit, ESP/TCS/ABS Control Unit and Steering Angle Sensor" for "ABS". Refer to <u>WT-35</u>, "Inspection 4: CAN Communication Line" for "AIR PRESSURE MONITOR". Refer to <u>ACS-46</u>, "<u>DTC 20 CAN COMM CIRCUIT</u>" for "ICC". Refer to <u>BCS-40</u>, "<u>CAN Communication Line Check</u>" for "SMART ENTRANCE".
- NG >> Replace ECM and/or Combination meter.

Component Inspection 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	Applox. 100 - 132



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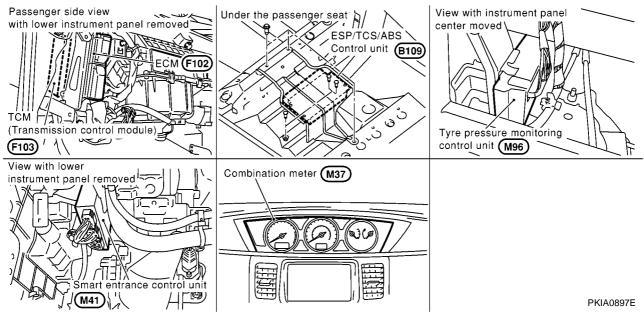
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System Description

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

Component Parts and Harness Connector Location

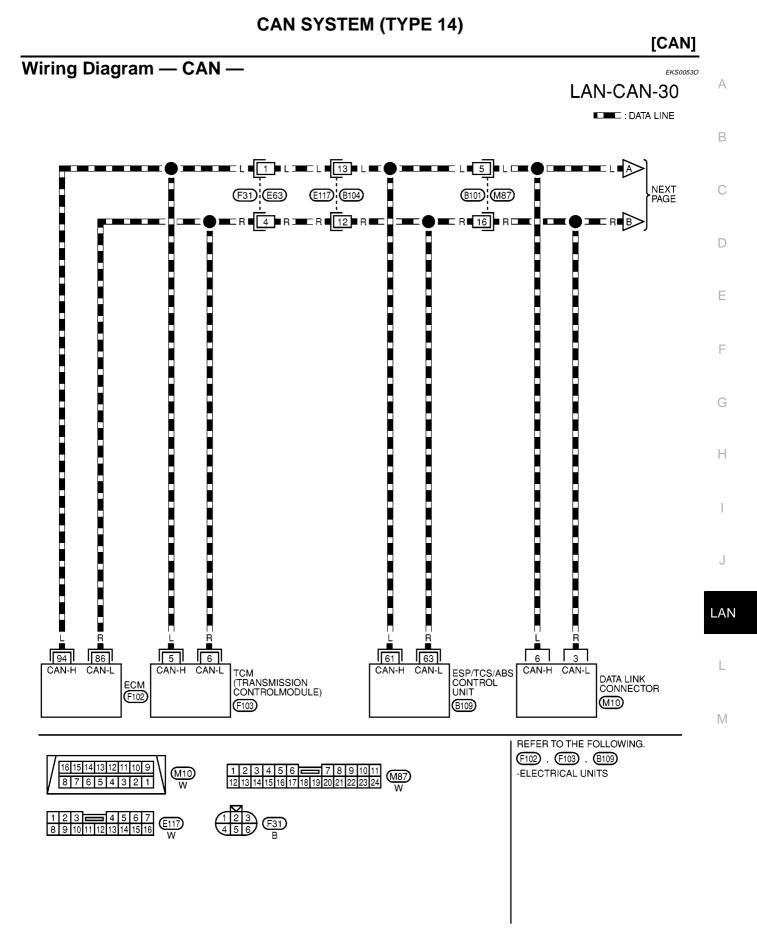


PFP:23710

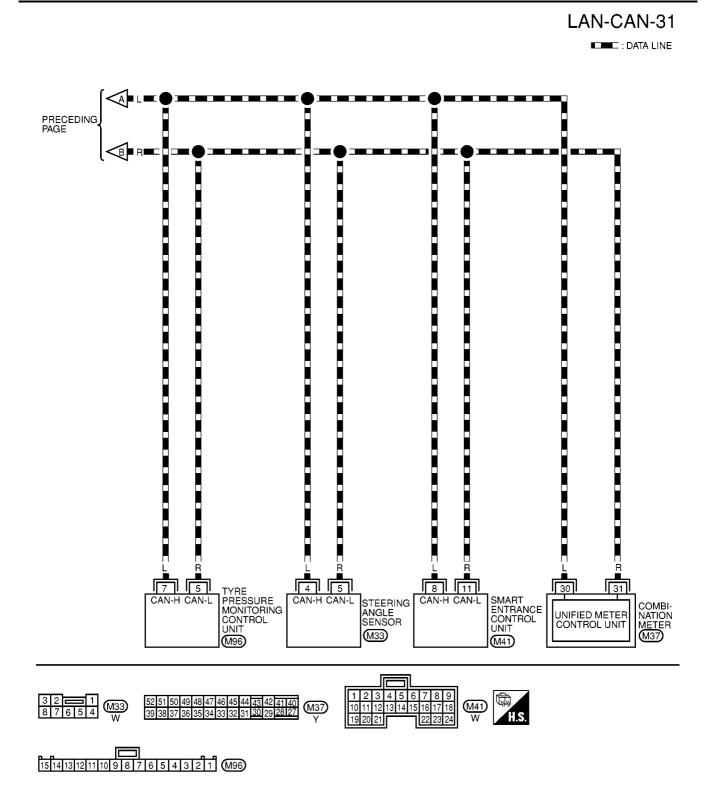
[CAN]

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EKS0053N



MKWA0240E

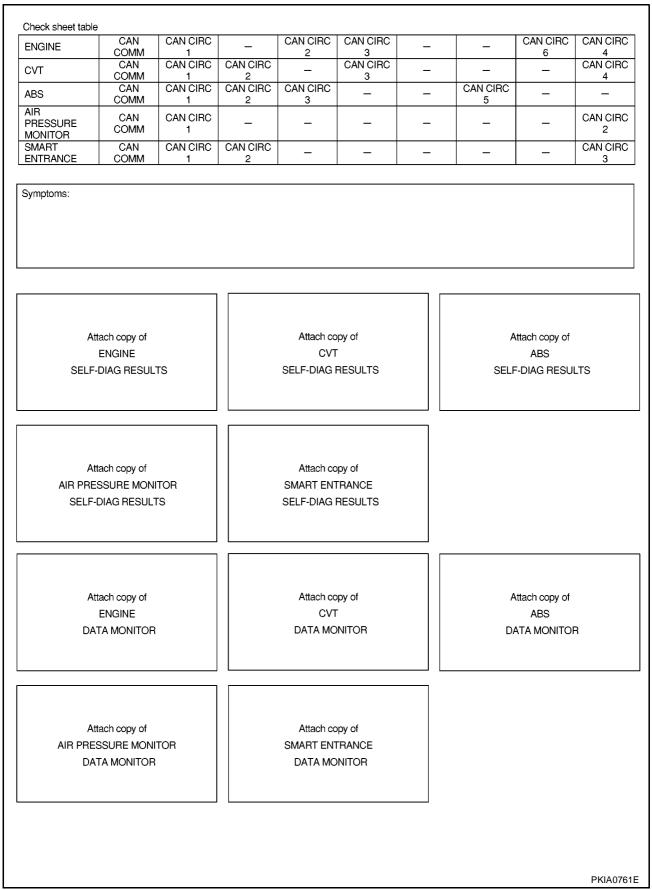


W	ork Flow	
1.	PRESSURE MONITOR", and "SMART ENTRANCE" displayed on CONSULT-II. Refer to EC-1083, "DTC	A
	<u>U1000, U1001 CAN COMMUNICATION LINE</u> " (WITH EURO-OBD) or <u>EC-1505, "DTC U1000, U1001</u> <u>CAN COMMUNICATION LINE</u> " (WITHOUT EURO-OBD) for "ENGINE" and Refer to <u>CVT-118, "DTC</u> <u>U1000 CAN COMMUNICATION LINE</u> " (EURO-OBD) or <u>CVT-201, "CAN COMMUNICATION LINE</u> " (ALL)	В
	for "CVT". Refer to <u>BRC-107, "Inspection 15 CAN Communication Circuit, ESP/TCS/ABS Control Unit and</u> <u>Steering Angle Sensor</u> for "ABS". Refer to <u>WT-35, "Inspection 4: CAN Communication Line"</u> for "AIR PRESSURE MONITOR". Refer to <u>BCS-40, "CAN Communication Line Check"</u> for "SMART ENTRANCE".	С
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"	D
	NOTE: If "NG" is displayed on "CAN COMM" for the diagnosed control unit, replace the control unit.	Е
4.	According to the check sheet results (example), start inspection. Refer to <u>LAN-287, "CHECK SHEET</u> <u>RESULTS (EXAMPLE)"</u>	F
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CHECK SHEET



CHECK SHEET RESULTS (EXAMPLE)

ENGINE		CAN CIRC	-	CAN CIRC	CAN CIRC	_	_	CAN CIRC	CAN CIRC
CVT	CAN COMM CAN	1 CAN CIRC	CAN CIRC	2	3 CAN CIRC		_	6	4 CAN CIRC
ABS	COMM CAN	1 CAN CIRC	2 CAN CIRC	CAN CIRC	3		CAN CIRC	_	4
AIR	COMM CAN	1 CAN CIRC	2	3			5		CAN CIRC
PRESSURE MONITOR	COMM	1	_	-	-	_	-	_	2
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2	_	_	—	-	_	CAN CIRC 3
	CAN	CAN CIRC		CANOIRC				CANOIRC	
ENGINE	COMM	1	-		V	-	-		V.
CVT	CAN COMM	CAN CIRC	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	CAN CIRC 2	_	_	_	_	_	CAN CIRC 3
ase 2: Replace T									
ase 2: Replace T									
	CAN COMM	CAN CIRC 1	-		CAN CIRC			CAN CIRC 6	CAN CIRC 4
ase 2: Replace Tr ENGINE CVT	CAN COMM CAN COMM	1 CAN CIRC 1	– CAN CIRC 2	-			-		
ENGINE CVT ABS	CAN COMM	1 CAN CIRC			3 CAN CIRC		– – CAN CIRC 5		4 CAN CIRC
ENGINE CVT ABS AIR PRESSURE MONITOR	CAN COMM CAN CAN COMM CAN COMM	1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1	2 CAN CIRC 2 —	-	3 CAN CIRC 3		CAN CIRC	6	4 CAN CIRC 4 CAN CIRC 2
ENGINE CVT ABS AIR PRESSURE	CAN COMM CAN CAN CAN CAN	1 CAN CIRC 1 CAN CIRC 1 CAN CIRC	2 CAN CIRC	-	3 CAN CIRC 3		CAN CIRC	6 — —	4 CAN CIRC 4 – CAN CIRC
ENGINE CVT ABS AIR PRESSURE MONITOR SMART	CAN COMM CAN CAN CAN CAN CAN COMM CAN COMM	1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1	2 CAN CIRC 2 – CAN CIRC		3 CAN CIRC 3 -		CAN CIRC 5 –	6 — — — —	4 CAN CIRC 4 CAN CIRC 2 CAN CIRC 3
ENGINE CVT ABS AIR PRESSURE MONITOR SMART	CAN COMM CAN CAN COMM CAN COMM CAN COMM	1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1	2 CAN CIRC 2 - CAN CIRC 2		3 CAN CIRC 3 - - - CAN CIRC 3		CAN CIRC 5 –	6 	4 CAN CIRC 4 CAN CIRC 2 CAN CIRC 3 CAN CIRC 4
ENGINE CVT ABS AIR PRESSURE MONITOR SMART ENTRANCE	CAN COMM CAN CAN COMM CAN COMM CAN COMM CAN COMM	1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1	2 CAN CIRC 2 CAN CIRC 2 CAN CIRC	CAN O'RC - CAN CIRC 2 -	3 CAN CIRC 3 - - - CAN CIRC			6 	4 CAN CIRC 4 CAN CIRC 2 CAN CIRC 3 CAN CIRC
ENGINE CVT ABS AIR PRESSURE MONITOR SMART ENTRANCE ENGINE CVT ABS	CAN COMM CAN CAN COMM CAN COMM CAN COMM CAN CAN	1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC	2 CAN CIRC 2 - CAN CIRC 2	CAN CIRC	3 CAN CIRC 3 - - - CAN CIRC 3		CAN CIRC 5 –	6 	4 CAN CIRC 4 CAN CIRC 2 CAN CIRC 3 CAN CIRC 4
ENGINE CVT ABS AIR PRESSURE MONITOR SMART ENTRANCE ENGINE CVT	CAN COMM CAN CAN CAN COMM CAN CAN CAN CAN CAN CAN CAN CAN CAN	1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC	2 CAN CIRC 2 CAN CIRC 2 CAN CIRC CAN CIRC	CAN CIRC CAN CIRC 2 CAN CIRC CAN CIRC	3 CAN CIRC 3 - - - CAN CIRC 3			6 CAN CIRC 6 	4 CAN CIRC 4 CAN CIRC 2 CAN CIRC 3 CAN CIRC 4

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ase 3: Replace ESP/TCS/ABS control unit									
ENGINE	CAN COMM	CAN CIRC 1	_	CAN CIRC 2		_	_	CAN CIRC 6	CAN CIRC 4
сvт	CAN COMM	CAN CIRC 1	CAN CIRC 2	_		_	_	_	CAN CIRC 4
ABS	CAN COMM	CAN CIRC	CAN CIRC 2	CAN CIRC 3	_	1	CAN CIRC 5	_	_
AIR PRESSURE MONITOR	CAN COMM	CAN CIRC 1	-	_	_	Ι	_	_	CAN CIRC 2
SMART ENTRANCE	CAN COMM	CAN CIRC	CAN CIRC 2	_	_	-	_	_	CAN CIRC 3

ENGINE	CAN COMM	CAN CIRC 1	_	CAN CIRC 2	CAN CIRC 3	—	-	CAN CIRC 6	CAN CIRC 4
сут	CAN COMM	CAN CIRC 1	CAN CIRC 2	_	CAN CIRC 3	_	-	_	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 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	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

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ENGINE	CAN	CAN CIRC	_	CAN CIRC	CAN CIRC	_		CAN CIRC	CAN CIRC
	COMM			2	3			6	4
CVT	CAN COMM	CAN CIRC	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	CAN COMM	CAN CIRC	-	-	_	_	-	-	CAN CIRC 2
MONITOR SMART ENTRANCE	CAN COMM	CAN CIRC	CAN CIRC	_	_	_		_	CAN CIRC
	CONIN	1	2						3
ENGINE	CAN COMM	CAN CIRC	_	CAN CIRC 2	CAN CIRC 3	_	-	CAN CIRC 6	CAN CIRC
CVT	CAN COMM	CAN CIRC	CAN CIRC 2	_	CAN CIRC 3	_	-	_	CAN CIRC 4
ABS	CAN COMM	CAN CIRC	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	CANOIRC	_	_	_	_	_	
ase 6	CAN	CAN CIRC		CAN CIRC				CAN	CAN QIRC
ENGINE	CAN COMM CAN	CAN CIRC 1 CAN CIRC	– CAN CIRC	2		-	_		V.
CVT	COMM	1	2	-		_	-	_	
ABS	CAN COMM	CAN CIRC 1	CANVIRC	CAN	_	_	CAN CIRC 5	-	_
AIR PRESSURE MONITOR	CAN COMM	CAN CIRC	_	-	_	_	-	_	CAN CIRC 2
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CANOIRC	-	_	_	_	-	CAN CIRC 3
ase 7	CAN	CAN CIRC		CAN CIRC	CAN CIRC			CANOIRC	CANOR
ENGINE	COMM	1	-	2	3	_	-	V	¥
CVT	CAN COMM	CAN CIRC 1	CAN CIRC 2	-	CAN CIRC 3	_	-	-	CANORC
ABS	CAN COMM	CAN CIRC	CAN CIRC 2	CAN CIRC 3	_	_	CAN	-	_
AIR PRESSURE MONITOR	CAN COMM	CAN CIRC	_	_	_	_	-	_	CAN CIRC 2
NUMBER	CAN	CAN CIRC	CAN OIRC	_	_	_		_	CAN CIRC 3

ENGINE	CAN COMM	CAN CIRC	_	CAN CIRC 2	CAN CIRC 3	-	_	CANORC	
сут	CAN COMM	CAN CIRC	CAN CIRC 2	_	CAN CIRC 3	-	_	_	CANOIRO
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 3	_	_		_	_
AIR PRESSURE MONITOR	CAN COMM	CAN CIRC 1	-	_	_	_	_	-	
SMART ENTRANCE	CAN COMM	CAN CIRC 1		_	_		_	_	CAN CIRC 3
		1			CAN CIRC			CAN QIRC	
ENGINE	CAN COMM	CAN CIRC	-	CAN CIRC 2		-	-		CAN

CVT	CAN COMM	CAN CIRC 1	CAN CIRC 2	-	CAN CIRC 3	-	_	-	
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 3	_	_	CAN CIRC 5	_	-
AIR PRESSURE MONITOR	CAN COMM	CAN CIRC 1	_	_	_	-	_	_	CAN
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN	_	_	_	_	—	CAN CIRC 3

Case 10									
ENGINE	CAN COMM	CAN	_	CANORC		_	_	CANORC	
CVT	CAN COMM	CAN CIRC 1		_	CAN CIRC 3	-	_	_	CAN CIRC 4
ABS	CAN COMM	CAN CIRC 1		CAN CIRC 3	_	1	CAN CIRC 5	1	1
AIR PRESSURE MONITOR	CAN COMM	CAN CIRC 1	_	_	_	Ι	_	-	CAN CIRC 2
SMART ENTRANCE	CAN COMM	CAN CIRC 1		_	_	1	_	-	CAN CIRC 3

Case 11

ENGINE	CAN COMM	CAN CIRC 1	_		CAN CIRC 3	_	_	CAN CIRC 6	CAN CIRC 4
СVТ	CAN COMM		CANOIRC	_	CANOIRC	-	_	-	
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	CANORC	-	_	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

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LAN-290

ENGINE	CAN	CAN CIRC		CAN CIRC	CANORC			CAN CIRC	CAN CIRC
ENGINE	COMM	1	_	2	V	-	-	6	4
сут	CAN COMM	CAN CIRC 1	CAN CIRC 2	_		-	-	-	CAN CIRC 4
ABS	CAN COMM	CANORC	CAN	CANOIRC	-	-		-	-
AIR PRESSURE MONITOR	CAN COMM	CAN CIRC 1	_	_	-	-	-	-	CAN CIRC 2
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2	-	-	_	-	_	CAN CIRC 3
ase 13							1		
ENGINE	CAN COMM	CAN CIRC 1	_	CAN CIRC 2	CAN CIRC 3	-	_	CAN CIRC 6	CAN CIRC 4
СЛТ	CAN COMM	CAN CIRC	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		-	-	-	_	-	-	
SMART	CAN	CAN CIRC	CAN CIRC						CAN CIRC
		1	2						3
ase 14	 CAN	1 CAN CIRC							3 CAN CIRC
ase 14 ENGINE	CAN COMM CAN	CAN CIRC 1 CAN CIRC	2 — CAN CIRC	CAN CIRC	3 CAN CIRC	_ 		CAN CIRC 6	3 CAN CIRC 4 CAN CIRC
ase 14 ENGINE CVT	CAN COMM CAN COMM CAN	CAN CIRC 1 CAN CIRC 1 CAN CIRC	2 – CAN CIRC 2 CAN CIRC	2 — CAN CIRC	3	 			3 CAN CIRC 4
ase 14 ENGINE CVT ABS AIR PRESSURE	CAN COMM CAN COMM	CAN CIRC 1 CAN CIRC 1 CAN CIRC 1	2 — CAN CIRC 2	2	3 CAN CIRC				3 CAN CIRC 4 CAN CIRC
ENTRANCE ase 14 ENGINE CVT ABS AIR PRESSURE MONITOR SMART ENTRANCE	CAN COMM CAN COMM CAN COMM CAN	1 CAN CIRC	2 CAN CIRC 2 CAN CIRC 2 -	2 — CAN CIRC	3 CAN CIRC				3 CAN CIRC 4 CAN CIRC 4 — CAN CIRC
ase 14 ENGINE CVT ABS AIR PRESSURE MONITOR SMART ENTRANCE	CAN COMM CAN COMM CAN COMM CAN COMM CAN	1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC	2 CAN CIRC 2 CAN CIRC 2 CAN CIRC	2 — CAN CIRC 3 —	3 CAN CIRC 3 —				3 CAN CIRC 4 CAN CIRC 4 CAN CIRC 2 CAN CIRC
ase 14 ENGINE CVT ABS AIR PRESSURE MONITOR SMART ENTRANCE	CAN COMM CAN COMM CAN COMM CAN COMM CAN	1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC	2 CAN CIRC 2 CAN CIRC 2 CAN CIRC	2 — CAN CIRC 3 —	3 CAN CIRC 3 —			6 — — — —	3 CAN CIRC 4 CAN CIRC 4 CAN CIRC 2 CAN CIRC
ase 14 ENGINE CVT ABS AIR PRESSURE MONITOR SMART ENTRANCE ASS 15 ENGINE	CAN COMM CAN CAN CAN COMM CAN COMM CAN COMM	1 CAN CIRC 1	2 CAN CIRC 2 CAN CIRC 2 CAN CIRC 2 CAN CIRC 2	2 — CAN CIRC 3 —	3 CAN CIRC 3 		- -		3 CAN CIRC 4 CAN CIRC 2 CAN CIRC 2 CAN CIRC 3
ase 14 ENGINE CVT ABS AIR PRESSURE MONITOR SMART ENTRANCE ase 15 ENGINE CVT	CAN COMM CAN COMM CAN COMM CAN COMM CAN COMM CAN COMM CAN COMM	1 CAN CIRC 1	2 CAN CIRC 2 CAN CIRC 2 CAN CIRC 2 CAN CIRC 2 CAN CIRC 2	2 CAN CIRC 3 - CAN CIRC 2 -	3 CAN CIRC 3 - - - CAN CIRC 3 CAN CIRC 3		- - -		3 CAN CIRC 4 CAN CIRC 4 - CAN CIRC 2 CAN CIRC 3 CAN CIRC 4 CAN CIRC 4 CAN CIRC 4
ase 14 ENGINE CVT ABS AIR PRESSURE MONITOR SMART ENTRANCE ASS ENGINE CVT ABS	CAN COMM CAN COMM CAN COMM CAN COMM CAN COMM CAN COMM CAN COMM CAN COMM	1 CAN CIRC 1	2 	2 CAN CIRC 3 - CAN CIRC	3 CAN CIRC 3 — — — — — — — — — — — — — — — — — —		- -		3 CAN CIRC 4 CAN CIRC 4 CAN CIRC 2 CAN CIRC 3 CAN CIRC 4 CAN CIRC 4 CAN CIRC 4 CAN CIRC 4 CAN CIRC
ase 14 ENGINE CVT ABS AIR PRESSURE MONITOR SMART ENTRANCE ase 15 ENGINE CVT	CAN COMM CAN COMM CAN COMM CAN COMM CAN COMM CAN COMM CAN	1 CAN CIRC 1	2 CAN CIRC 2 CAN CIRC 2 CAN CIRC 2 CAN CIRC 2 CAN CIRC 2 CAN CIRC 2	2 CAN CIRC 3 - CAN CIRC 2 CAN CIRC 2 CAN CIRC	3 CAN CIRC 3 - - - CAN CIRC 3 CAN CIRC 3				3 CAN CIRC 4 CAN CIRC 4 - CAN CIRC 2 CAN CIRC 3 CAN CIRC 4 CAN CIRC 4 CAN CIRC 4

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ENGINE	CAN COMM	CAN CIRC	_	CAN CIRC 2	CAN CIRC 3	_	-	CAN CIRC 6	
CVT	CAN COMM	CAN CIRC 1	CAN CIRC 2	-	CAN CIRC 3	_	-	_	CANORC
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 3	_	_	CAN CIRC 5	_	-
AIR PRESSURE MONITOR	CAN COMM	CAN CIRC 1	_	_	_	_	_	_	
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2	-	_	-	-	_	
ENGINE	CAN COMM	CANOIRC	_	CANOIRC		_	_	CANORC	
ase 17	0.00			0.000			1	0.00100	
	COMM			×					
СЛ	COMM			-		-	-	-	
ABS	CAN COMM	CANOIRC		CANORC	_	_	CANOIRC	-	_
AIR PRESSURE MONITOR	CAN COMM	CANOIRC	-	_	-	-	-	-	
SMART ENTRANCE	CAN COMM	CANOIRC		_	_	_	_	_	

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 <u>LAN-293</u>, "Circuit Check <u>Between TCM and ESP/TCS/ABS Control Unit"</u>

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 <u>LAN-296</u>, <u>"Circuit Check Between Steering Angle Sensor and Smart Entrance Control Unit"</u>

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 <u>LAN-297, "ESP/TCS/ABS Control Unit Circuit</u> <u>Check"</u>

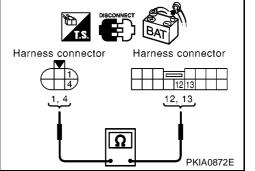
Case 13:Check Tyre pressure monitoring control unit Circuit. Refer to <u>LAN-298</u>, "Tyre Pressure Monitoring <u>Control Unit Circuit Check"</u>

Case 14:Check Steering angle sensor Circuit. Refer to <u>LAN-298</u>, "Steering Angle Sensor Circuit Check" Case 15:Check Smart entrance control unit Circuit. Refer to <u>LAN-299</u>, "Smart Entrance Control Unit Circuit <u>Check"</u>

LAN-292

	[CAN]
	use 16:Check Combination meter Circuit. Refer to <u>LAN-299, "Combination Meter Circuit Check"</u> use 17:Check CAN communication Circuit. Refer to <u>LAN-300, "CAN Communication Circuit Check"</u>
	rcuit Check Between TCM and ESP/TCS/ABS Control Unit EKS0053Q CHECK CONNECTOR CHECK CONNECTOR
1. 2. 3.	Turn ignition switch OFF. Disconnect the negative battery terminal. 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.
0	Between TCM and ESP/TCS/ABS control unit. <u>(or NG</u> WK >> GO TO 2. IG >> Repair terminal or connector.
2.	CHECK HARNESS FOR OPEN CIRCUIT
1. 2.	Disconnect TCM connector and harness connector F31. 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
0	$\frac{\text{Cor NG}}{\text{OK}} >> \text{ GO TO 3.}$ $\frac{5.6}{\text{O}} = 1.4$ $\frac{1.4}{\text{O}}$ $\frac{1.4}{\text{O}}$ $\frac{1.4}{\text{O}}$ $\frac{1.4}{\text{O}}$
3.	
1.	Disconnect harness connector E117.
2.	(L), 4 (R) and harness connector E117 terminals 13 (L), 12 (R). 1(L) – 13(L) : Continuity should exist.
٥k	4(R) – 12(R) : Continuity should exist.

- OK or NG
- OK
- >> GO TO 4. >> Repair harness. NG



4. CHECK HARNESS FOR OPEN CIRCUIT

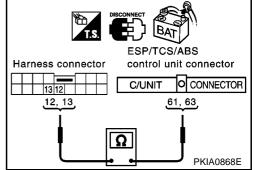
- 1. Disconnect ESP/TCS/ABS control unit connector.
- Check continuity between harness connector B104 terminals 13 (L), 12 (R) and ESP/TCS/ABS control unit harness connector B109 terminals 61 (L), 63 (R).
 - 13(L) 61(L)
 - 12(R) 63(R)

: Continuity should exist.

: 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 <u>EC-1083</u>, "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 COMMUNICA-TION 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

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.
- 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)

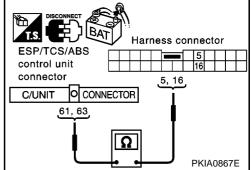
63(R) - 16(R)

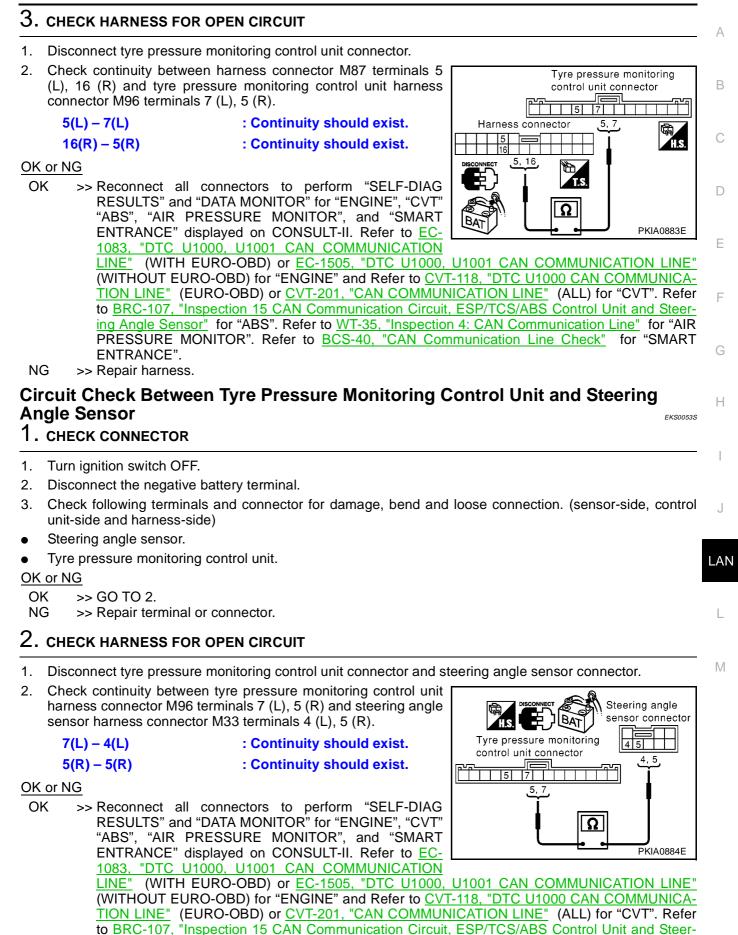
: Continuity should exist.

: Continuity should exist.

OK or NG

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





LAN-295

ing Angle Sensor" for "ABS". Refer to <u>WT-35, "Inspection 4: CAN Communication Line"</u> for "AIR PRESSURE MONITOR". Refer to <u>BCS-40, "CAN Communication Line Check"</u> 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.
- 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) 11(R) – 5(R)

: Continuity should exist. : 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 <u>EC-</u> 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 COMMUNICA-TION 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

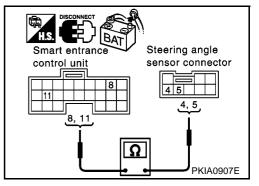
1. CHECK CONNECTOR

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- 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.



[CAN]



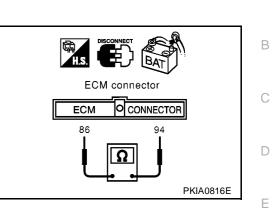
- 1. Disconnect ECM connector.
- 2. Check resistance between ECM harness connector F102 terminals 94(L) and 86(R).

94(L) - 86(R)

: Approx. 108 – 132Ω

OK or NG

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



TCM Circuit Check

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 terr

NG >> Repair terminal or connector.

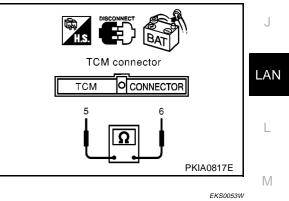
2. CHECK HARNESS FOR OPEN CIRCUIT

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

: Approx. 54 – 66 Ω

OK or NG

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



ESP/TCS/ABS Control Unit Circuit Check

1. CHECK CONNECTOR

- 1. Turn ignition switch OFF.
- 2. Disconnect the negative battery terminal.
- 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.

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2. CHECK HARNESS FOR OPEN CIRCUIT

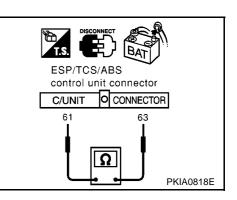
- 1. Disconnect ESP/TCS/ABS control unit connector.
- 2. Check resistance between ESP/TCS/ABS control unit harness connector B109 terminals 61(L) and 63(R).

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. Turn ignition switch OFF.

1. CHECK CONNECTOR

- 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.

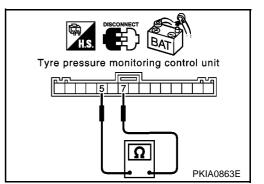


1. CHECK CONNECTOR

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

OK or NG

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



EKS0053Y

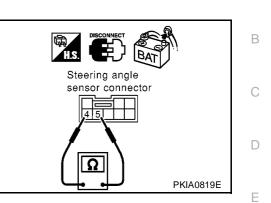
- 1. Disconnect steering angle sensor connector.
- 2. Check resistance between steering angle sensor harness connector M33 terminals 4(L) and 5(R).

4(L) - 5(R)

: Approx. 54 – 66 Ω

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

1. CHECK CONNECTOR

1. Turn ignition switch OFF.

- 2. Disconnect the negative battery terminal.
- Check terminals and connector of smart entrance control unit for damage, bend and loose connec-3. tion.(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 – 66 Ω

OK or NG

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



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

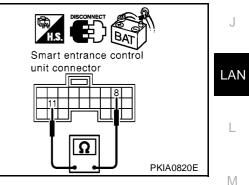
- OK >> GO TO 2.
- NG >> Repair terminal or connector.

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EKS00540

$\overline{2}$. CHECK HARNESS FOR OPEN CIRCUIT

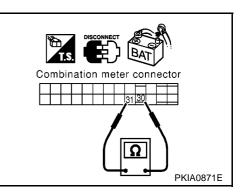
- 1. Disconnect combination meter connector.
- 2. Check resistance between combination meter harness connector M37 terminals 30(L) and 31(R).

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. Turn ignition switch OFF.

1. CHECK CONNECTOR

- 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.

[CAN] 2. CHECK HARNESS FOR SHORT CIRCUIT А 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. Check continuity between Data link connector M10 terminals 6 2. (L) and 3(R). : Continuity should not exist. 6(L) - 3(R)Data link connecto OK or NG E OK >> GO TO 3. NG >> • Repair harness between smart entrance control unit and combination meter. Repair harness between smart entrance control unit F and steering angle sensor. PKIA0824E • 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. Н ${\mathfrak B}_{\cdot}$ 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. Data link connector 3(R) – ground : Continuity should not exist. OK or NG 6 3 OK >> GO TO 4. 6,3 NG >> • Repair harness between smart entrance control unit LAN and combination meter. • Repair harness between smart entrance control unit PKIA0825E and steering angle sensor. L • Repair harness between steering angle sensor and tyre pressure monitoring control unit. Repair harness between Data link connector and tyre pressure monitoring control unit. Μ • Repair harness between Data link connector and harness connector M87. 4. CHECK HARNESS FOR SHORT CIRCUIT Disconnect ESP/TCS/ABS control unit connector and harness connector B104. 1. 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. ESP/TCS/ABS OK or NG control unit connector C/UNIT O CONNECTOR OK >> GO TO 5. NG >> • Repair harness between ESP/TCS/ABS control unit 61 63 and harness connector B101.

• Repair harness between harness connector B104 and harness connector B101.



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PKIA0818E

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

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

: 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.

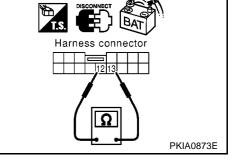
6. CHECK HARNESS FOR SHORT CIRCUIT

- 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.



Harness connecto

1213

12, 13

7. CHECK HARNESS FOR SHORT CIRCUIT

Check continuity between harness connector E117 terminals 13 (L) and 12(R) and ground.

- 13(L) ground
- 12(R) ground
- : Continuity should not exist. : 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

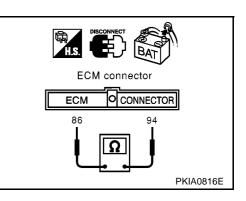
- Disconnect ECM connector and TCM connector. 1.
- Check continuity between ECM harness connector F102 termi-2. nals 94 (L) and 86(R).

94(L) - 86(R)

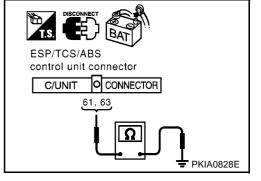
: Continuity should not exist.

OK or NG

- OK >> GO TO 9.
- NG >> • Repair harness between ECM and harness connector F31
 - Repair harness between TCM and harness connector F31.



PKIA0874E



: Continuity should not exist.

: Continuity should not exist.

9. CHECK HARNESS FOR SHORT CIRCUIT

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

- 94(L) ground
- 86(R) ground

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"

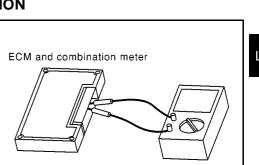
OK or NG

- 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" Н (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 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	Approx. 100 - 132



ECM connector CONNECTOR ECM 86, 94

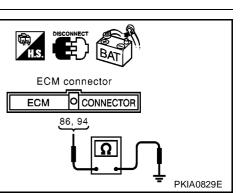
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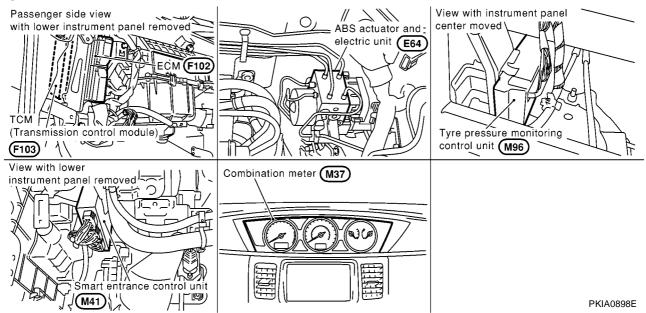
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System Description

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

Component Parts and Harness Connector Location



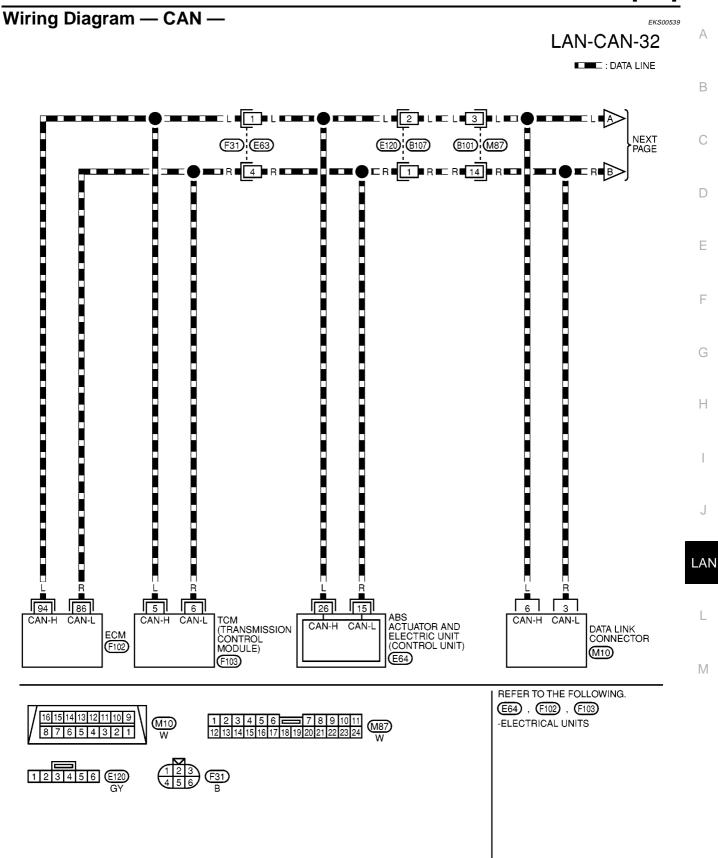
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PFP:23710

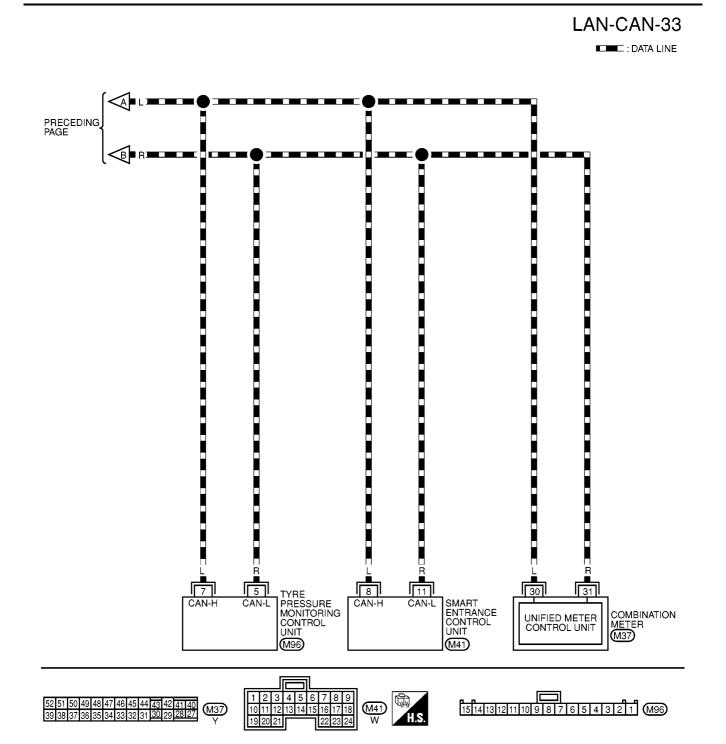
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[CAN]



MKWA0242E



[CAN]

Wo	ork 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 <u>EC-1083, "DTC</u> U1000, U1001 CAN COMMUNICATION LINE" (WITH EURO-OBD) or <u>EC-1505</u> , "DTC U1000, U1001	A
	CAN COMMUNICATION LINE" (WITHOUT EURO-OBD) for "ENGINE" and Refer to <u>CVT-118</u> , " <u>DTC</u> <u>U1000 CAN COMMUNICATION LINE</u> " (EURO-OBD) or <u>CVT-201</u> , " <u>CAN COMMUNICATION LINE</u> " (ALL)	В
	for "CVT". Refer to <u>BRC-33</u> , " <u>CAN Communication Circuit</u> " for "ABS". Refer to <u>WT-35</u> , " <u>Inspection 4</u> : <u>CAN</u> <u>Communication Line</u> " for "AIR PRESSURE MONITOR". Refer to <u>BCS-40</u> , " <u>CAN Communication Line</u> " <u>Check</u> " for "SMART ENTRANCE".	С
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"	D
	NOTE: If "NG" is displayed on "CAN COMM" for the diagnosed control unit, replace the control unit.	Е
4.	According to the check sheet results (example), start inspection. Refer to <u>LAN-309</u> , "CHECK SHEET <u>RESULTS (EXAMPLE)</u> "	F
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CHECK SHEET

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MM							
			_	-	-	-	3
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R		SMART E	NTRANCE				
		С	VT			Attach copy of ABS DATA MONITC	
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CHECK SHEET RESULTS (EXAMPLE)

NGINE	CAN COMM	CAN CIRC	_	CAN CIRC 2	_	_	CAN CIRC 6	CAN CIRC
VT	CAN	CAN CIRC	CAN CIRC	_	CAN CIRC	_		CAN CIRC
BS	CAN COMM	CAN CIRC	2 CAN CIRC	_	3	_	_	4
	CAN	CAN CIRC	2	_	_	_		CAN CIRC
MONITOR	COMM CAN COMM	1 CAN CIRC 1	CAN CIRC	_	_	_	_	2 CAN CIRC 3
		· · ·			I I			
NGINE	CAN COMM	CAN CIRC	-	CANOIRC	-	-	CANORC	CANORC
УVT	CAN COMM	CAN CIRC 1	CAN CIRC 2	-	CAN CIRC 3	-	-	CAN CIRC 4
BS	CAN COMM	CAN CIRC	CAN CIRC 2	-	_	_	_	-
IR PRESSURE IONITOR	CAN COMM	CAN CIRC	_	_	_	_	_	CAN CIRC 2
MART ENTRANCE	CAN COMM	CAN CIRC	CAN CIRC 2	_	_	_	-	CAN CIRC 3
se 2: Replace TCM	CAN	CAN CIRC	I				CAN CIRC	CAN CIRC
ENGINE	COMM	1 CAN CIRC	– CAN CIRC	CANORC	– CAN CIRC	-	6	4 CAN CIRC
CVT	CAN COMM CAN	CAN CIRC 1 CAN CIRC	2 CAN CIRC	-	3	-	-	4
ABS	COMM	1	2	-	-	-	-	-
IR PRESSURE IONITOR	CAN COMM	CAN CIRC 1	_	_	_	-	-	CAN CIRC 2
MART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2	_	-	_	-	CAN CIRC 3
ENGINE	CAN COMM	CAN CIRC	_	CAN CIRC	_	_	CAN CIRC 6	CAN CIRC
сул	CAN COMM	CAN CIRC	CANORC	_	CANORC	_		CANORC
ABS	CAN COMM	CAN CIRC	CAN CIRC 2	_	_	_	_	_
IR PRESSURE IONITOR	CAN COMM	CAN CIRC	_	_	_	_	-	CAN CIRC
MART ENTRANCE	CAN COMM	CAN CIRC	CAN CIRC 2	_	_	_	_	CAN CIRC 3

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	CAN CIRC	CAN CIRC 2	_	_	_	_	_
CAN COMM	CAN CIRC	_	_	-	_	_	CAN CIRC 2
CAN COMM	CAN CIRC 1	CAN CIRC 2	_	-	_	_	CAN CIRC 3
	•						
CAN COMM	CAN CIRC 1	_	CAN CIRC 2	-	-	CAN CIRC 6	CAN CIRC 4
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CAN COMM	CAN CIRC 1	-	-	_	-	-	CAN CIRC 2
CAN COMM	CAN CIRC 1	CAN CIRC 2	-	-	_	-	CAN CIRC 3
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COMM	1	_	CAN CIRC 2	-		CAN CIRC 6	CAN CIRC 4
COMM	1	2	_	CAN CIRC 3	-	-	CAN CIRC 4
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ENGINE	CAN	CAN CIRC	_	CAN CIRC	_	_	CAN CIRC	CAN CIRC
CVT	COMM CAN	1 CAN CIRC	CAN CIRC	2	CAN CIRC		6	4 CAN CIRC
	COMM CAN	1 CAN CIRC	2 CAN CIRC		3			4
ABS AIR PRESSURE	COMM CAN	1 CAN CIRC	2		_	_	-	- CAN CIRC
MONITOR	COMM	1	-	-	-	_	-	2
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2	-	_	_	-	CAN CIRC 3
	CAN	CAN CIRC		CAN CIRC			CAN CIRC	CAN CIRC
ENGINE	COMM	1	-	2	-	-	6	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	_	_	_	_	-	CAN CIRC 2
SMART ENTRANCE	CAN COMM	CAN CIRC	CAN	_	_	_	_	
ase 6								
ENGINE	CAN COMM	CAN CIRC	_	CAN CIRC 2	_	_	CAN	
CVT	CAN COMM	CAN CIRC	CAN CIRC 2	_	CANOIRC	_	_	CANOIRC
ABS	CAN COMM	CAN CIRC	CAN	_	_	_	_	_
AIR PRESSURE MONITOR	CAN COMM	CAN CIRC	_	_	_	_	_	CAN CIRC 2
SMART ENTRANCE	CAN	CAN CIRC	CAN OIRC	_	_	_	_	CAN CIRC
	COMM	1	V	i				3
ase 7	CAN	CAN CIRC		CAN CIRC			CANOIRC	CAN ØIRC
ENGINE	COMM	1 CAN CIRC	– CAN CIRC	2	- CAN CIRC	-		✔
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ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	-	-	-	-	-
AIR PRESSURE MONITOR	CAN COMM	CAN CIRC	_	_	-	_	-	CAN CIRC 2
SMART ENTRANCE	CAN COMM	CAN CIRC	CAN OIRC	_	_	_	_	CAN CIRC 3
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	COMM CAN	1 CAN CIRC	2 CAN CIRC		3			V,
ABS	COMM	1 CAN CIRC	2	_	_	-	-	-
AIR PRESSURE MONITOR	CAN COMM	CAN CIRC	-	-	-	—	-	
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN	-	_	-	-	CAN CIRC
ase 9	CAN		[
ENGINE	COMM	CANORC	-	CAN	-	-	CANOIRC	CAN
CVT	CAN COMM	CAN CIRC	CANORC	_	CAN CIRC 3	-	_	CAN CIRC 4
ABS	CAN COMM	CAN CIRC	CANOIRC	_	_	_	_	_
	CAN	CAN CIRC		_	_	_	_	CAN CIRC
MONITOR SMART ENTRANCE	COMM CAN	CAN CIRC	CANOIRC		_	_		2 CAN CIRC
	COMM	1	Ľ					3
ase 10 ENGINE	CAN	CAN CIRC	_	CAN CIRC	_		CAN CIRC	CAN CIR
CVT	COMM CAN		CANOIRC	e –	CANOIRC	_	6	
	COMM CAN	CAN CIRC	CAN CIRC	_	V			V.
ABS	COMM	1	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
ase 11								
ENGINE	CAN	CAN CIRC	_	CAN CIRC	_	_	CAN CIRC	CAN CIRC
0.5	COMM CAN	1 CAN CIRC	CAN CIRC	2	CANORC		6	4 CAN CIRC
	COMM	1 CAN OIRC	2 CAN OIRC		V	_		4
	I CAN			_	-	-	-	-
ABS	CAN COMM	V V	¥.					
ABS AIR PRESSURE	COMM CAN	CAN CIRC		-	_	_	-	CAN CIRC 2
ABS AIR PRESSURE MONITOR SMART ENTRANCE	COMM	CAN CIRC	CAN CIRC 2	-	-	_	-	

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ENGINE	CAN	CAN CIRC	_	CAN CIRC	_	_	CAN CIRC	CAN CIRC
	COMM CAN	1 CAN CIRC	CAN CIRC	2	CAN CIRC		6	4 CAN CIRC
CVT	COMM	1	2	-	3	_	-	4
ABS	CAN COMM	CAN CIRC	CAN CIRC 2	-	-	—	-	-
AIR PRESSURE	CAN	CAN QIRC	_	_	_	_	_	CAN OIRC
	COMM CAN	CAN CIRC	CAN CIRC					CAN CIRC
SMART ENTRANCE	COMM	1	2	_	_	_	_	3
ase 13								
ENGINE	CAN	CAN CIRC	_	CAN CIRC	_	_	CANORC	CAN CIRC
-	COMM CAN	1 CAN CIRC		2	CAN CIRC		V	4 CAN CIRC
CVT	COMM	1	2	-	3	-		4
ABS	CAN COMM	CAN CIRC	CAN CIRC 2	-	-	_	-	_
AIR PRESSURE	CAN	CAN CIRC	_	_	_	_	_	CAN CIRC
	COMM CAN	1 CAN QIRC						2 CAN O'RC
SMART ENTRANCE	COMM		V	-	-		-	V
ase 14	CAN	CAN CIRC	<u> </u>	CAN CIRC			CAN CIRC	CAN CIRC
ENGINE	COMM	1		2	-	_	6	V V
CVT	CAN COMM	CAN CIRC	CAN CIRC 2	-	CAN CIRC 3	-	-	CANORC
ABS	CAN	CAN CIRC	CAN CIRC	_	_	_	_	
AIR PRESSURE	COMM CAN	1 CAN CIRC	2					CANORC
MONITOR	COMM	1	-	-	-	-	-	Y Y
SMART ENTRANCE	CAN COMM	CAN CIRC	CAN CIRC 2	-	-	-	-	CANORC
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ase 15				1				
ENGINE	CAN COMM	CANOIRC	-	CANOIRC	-	-	CAN CIRC	
СУТ	CAN	CANOIRC	CANOIRC	_	CANOIRC	_		CANOIRC
	COMM CAN	CANORC			V3			V 4
ABS	COMM	V	V	-	-	-	-	-
AIR PRESSURE MONITOR	CAN COMM		-	-	-	_	-	
SMART ENTRANCE	CAN COMM	CANOIRC	CANOIRC	_	_	_	_	CAN

NOTE:

If "NG" is displayed on "CAN COMM" for the diagnosed control unit, replace the control unit.

LAN-313

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 <u>LAN-314</u>, <u>"Circuit Check Between TCM and ABS Actuator and Electric Unit (control unit)"</u>

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 <u>LAN-318</u>, "ABS Actuator and <u>Electric Unit (control unit) Circuit Check</u>"

Case 12:Check Tyre pressure monitoring control unit Circuit. Refer to <u>LAN-319</u>, "Tyre Pressure Monitoring <u>Control Unit Circuit Check"</u>

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 <u>LAN-320, "Combination Meter Circuit Check"</u> Case 15:Check CAN communication Circuit. Refer to <u>LAN-320, "CAN Communication Circuit Check"</u>

Circuit Check Between TCM and ABS Actuator and Electric Unit (control unit)

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).

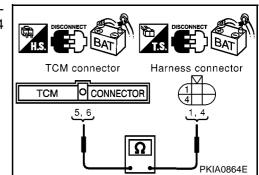
OK or NG

OK >> GO TO 2.

NG >> Repair terminal or connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

- 1. Disconnect TCM connector and harness connector F31.
- 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)
 - 6(R) 4(R)
- OK or NG
- OK >> GO TO 3.
- NG >> Repair harness.



: Continuity should exist.

: Continuity should exist.

3. CHECK HARNESS FOR OPEN CIRCUIT

- 1. Disconnect ABS actuator and electric unit (control unit) connector.
- 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)
 - 4(R) 15(R)

: Continuity should exist.

: 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 <u>EC-1083, "DTC U1000, U1001 CAN COMMUNICA-</u> Harness connector 1,4 1,4 1,4 1,4 1,4 15,26 PKIA0875E

TION 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 COM-MUNICATION 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

- **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.

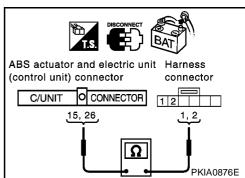
NG >> Repair terminal or connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

- 1. Disconnect ABS actuator and electric unit (control unit) connector and harness connector E120.
- 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)
 - 15(R) 1(R)
- : Continuity should exist. : Continuity should exist.

OK or NG

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



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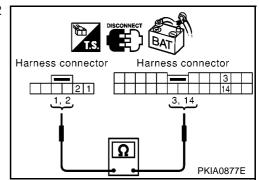
3. CHECK HARNESS FOR OPEN CIRCUIT

- 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).
 - : Continuity should exist. 2(L) - 3(L)
 - 1(R) 14(R)

: Continuity should exist.

OK or NG

- OK >> GO TO 4.
- NG >> Repair harness.



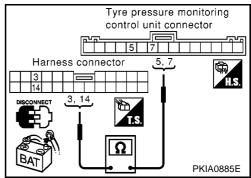
4. CHECK HARNESS FOR OPEN CIRCUIT

- 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)14(R) - 5(R)
- : Continuity should exist.

: 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 COMMUNICA-



TION 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 COM-MUNICATION LINE" (EURO-OBD) or <u>CVT-201</u>, "CAN COMMUNICATION LINE" (ALL) for "CVT". Refer to <u>BRC-33</u>, "CAN Communication Circuit" for "ABS". Refer to <u>WT-35</u>, "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**

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.

EKS0053D

LAN-316

Tyre pressure monitoring

control unit connector

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1. Disconnect smart entrance control unit connector and tyre pressure monitoring control unit connector.

ີ <u>8,</u> 11

8

- 2. Check continuity between smart entrance control unit harness Smart entrance connector M41 terminals 8 (L), 11 (R) and tyre pressure monitorcontrol unit connector ing control unit harness connector M96 terminals 7 (L), 5 (R).
 - 8(L) 7(L)11(R) - 5(R)
- : Continuity should exist.

: Continuity should exist.

OK or NG

- ູ5, 7 OK >> Reconnect all connectors to perform "SELF-DIAG RESULTS" and "DATA MONITOR" for "ENGINE", Ω "CVT", "ABS", "AIR PRESSURE MONITOR", and PKIA0861E "SMART ENTRANCE" displayed on CONSULT-II. Refer to EC-1083, "DTC U1000, U1001 CAN COMMUNICA-TION 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 COM-MUNICATION 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

- 1. CHECK CONNECTOR
- Turn ignition switch OFF. 1.
- 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.

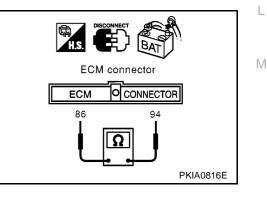
2. CHECK HARNESS FOR OPEN CIRCUIT

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

: Approx. 108 – 132 Ω

OK or NG

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



TCM Circuit Check

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.

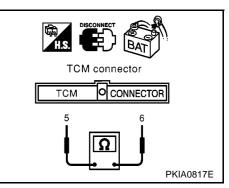
2. CHECK HARNESS FOR OPEN CIRCUIT

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

5(L) - 6(R)

OK or NG

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



ABS Actuator and Electric Unit (control unit) Circuit Check

: Approx. 54 – 66 Ω

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.

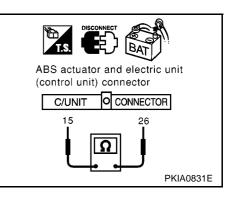
2. CHECK HARNESS FOR OPEN CIRCUIT

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

: Approx. 54 – 66Ω

OK or NG

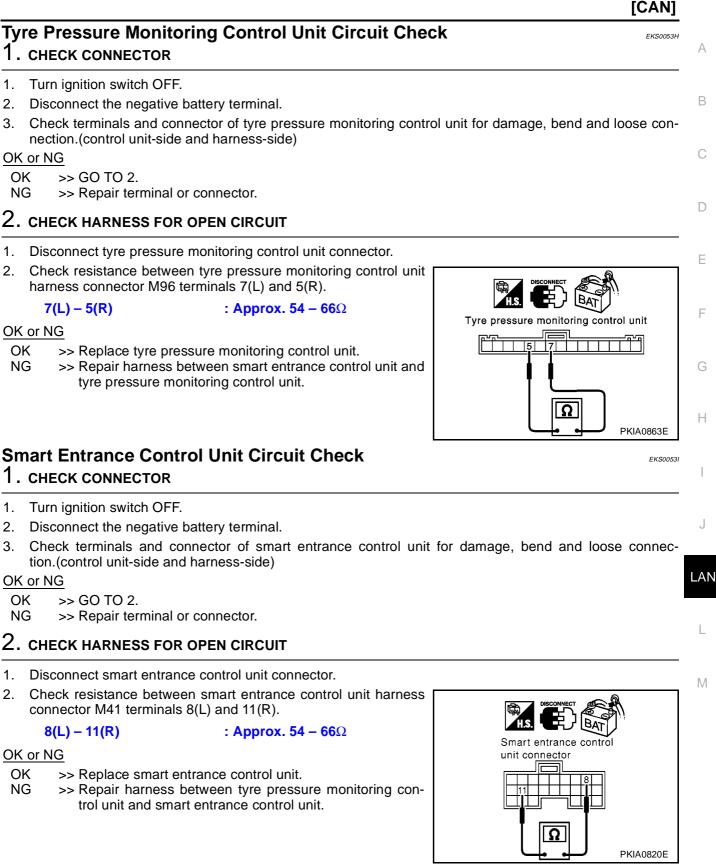
- OK >> Replace ABS actuator and electric unit (control unit).
- NG >> Repair harness between Data link connector and ABS actuator and electric unit (control unit).





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[CAN]



Combination Meter Circuit Check

1. CHECK CONNECTOR

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

: Approx. 108 – 132Ω

OK or NG

OK >> GO TO 2.

NG >> Repair terminal or connector.

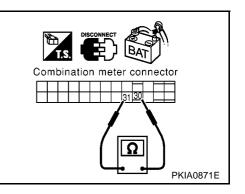
2. CHECK HARNESS FOR OPEN CIRCUIT

- 1. Disconnect combination meter connector.
- Check resistance between combination meter harness connector M37 terminals 30(L) and 31(R).

30(L) – 31(R)

OK or NG

- OK >> Replace combination meter.
- NG >> Repair harness between smart entrance control unit and combination meter.



CAN Communication Circuit Check

1. CHECK CONNECTOR

- 1. Turn ignition switch OFF.
- 2. Disconnect the negative battery terminal.
- 3. Check following terminals and connector for damage, 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.

EKS0053K

CHECK HARNESS FOR SHORT CIRCUIT Disconnect the following connectors.

- Combination meter connector.
- Smart entrance control unit connector.
- Tyre pressure monitoring control unit connector.
- Harness connector M87.
- 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 3(R) – ground : Continuity should not exist.

: 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

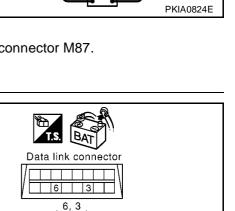
- 1. Disconnect harness connector B107.
- Check continuity between harness connector B101 terminals 3 (L) and 14(R).

3(L) – 14(R)

: Continuity should not exist.

OK or NG

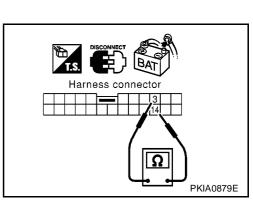
- OK >> GO TO 5.
- NG >> Repair harness between harness connector B101 and harness connector B107.



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Data link connector

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5. CHECK HARNESS FOR SHORT CIRCUIT

Check continuity between harness connector B101 terminals 3 (L), 14(R) and ground.

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

: 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

- >> 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.

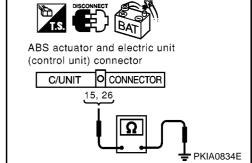
26(L) – ground

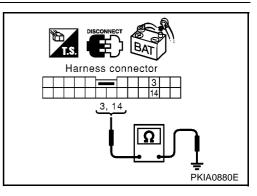
: Continuity should not exist. : Continuity should not exist.

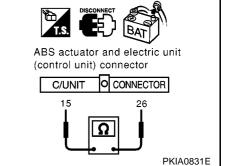
15(R) – ground

OK or NG

- OK >> GO TO 8. NG >> • Repair
 - > Repair harness between ABS actuator and electric unit (control unit) and harness connector E120.
 - Repair harness between harness connector E120 and harness connector E63.







15(R) – gr

8. CHECK HARNESS FOR SHORT CIRCUIT

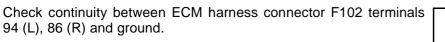
- 1. Disconnect ECM connector and TCM connector.
- 2. Check continuity between ECM harness connector F102 terminals 94 (L) and 86(R).
 - 94(L) 86(R)

: 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



94(L) – ground

86(R) – ground

- : Continuity should not exist. : Continuity should not exist.
- OK or NG

NG

- OK >> GO TO 10.
 - >> 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"

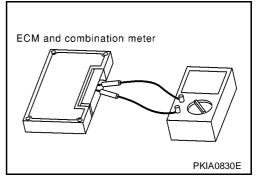
OK or NG

- LAN 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 <u>CVT-201</u>, "CAN COMMUNICATION LINE" (ALL) for "CVT". Refer to <u>BRC-33</u>, "<u>CAN Communication Circuit</u>" for "ABS". Refer to <u>WT-35</u>, "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 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	Applox. 100 - 132



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ECM connector

ECM

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ECM

ECM connector

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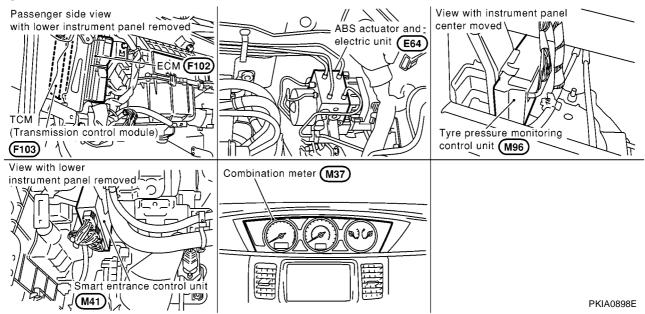
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EKS0053L

System Description

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

Component Parts and Harness Connector Location



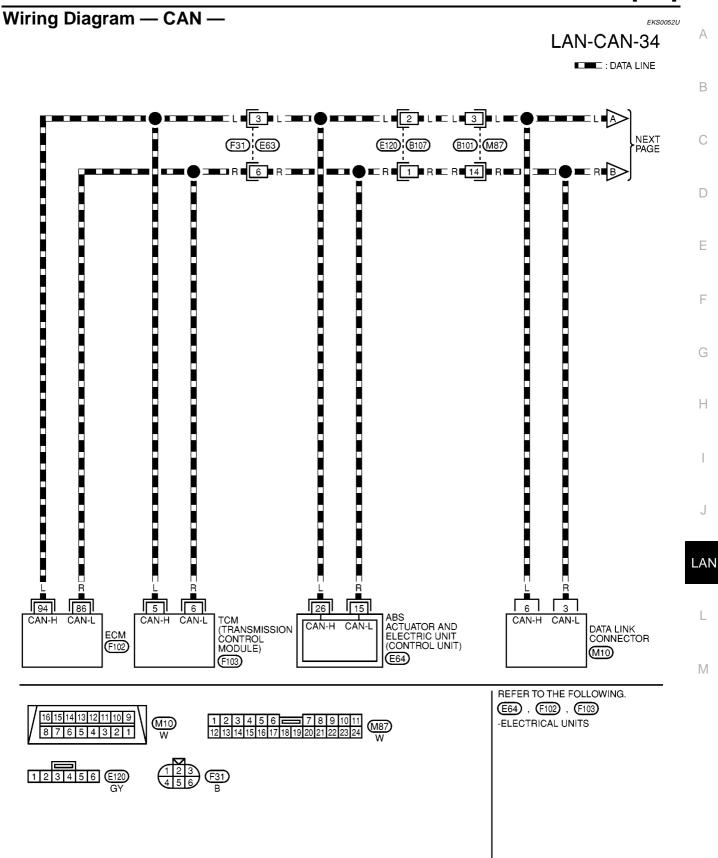
[CAN]

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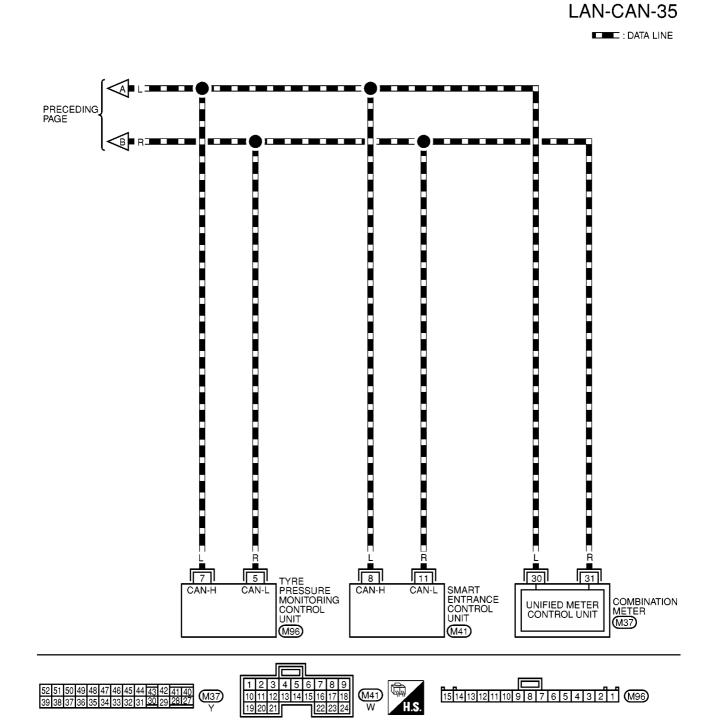
EKS0052T



[CAN]



MKWA0246E



MKWA0247E

[CAN]

Wo	ork Flow EK50052V	
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 <u>EC-150</u> , " <u>DTC</u>	А
	<u>U1000, U1001 CAN COMMUNICATION LINE</u> " (WITH EURO-OBD) or <u>EC-663, "DTC U1000, U1001</u> <u>CAN COMMUNICATION LINE</u> " (WITHOUT EURO-OBD) for "ENGINE" and Refer to <u>AT-190, "DTC</u> <u>U1000 CAN COMMUNICATION LINE</u> " (EURO-OBD) or <u>AT-393, "CAN COMMUNICATION LINE</u> " (ALL)	В
	for "A/T". Refer to <u>BRC-33, "CAN Communication Circuit"</u> for "ABS". Refer to <u>WT-35, "Inspection 4: CAN</u> <u>Communication Line"</u> for "AIR PRESSURE MONITOR". Refer to <u>BCS-40, "CAN Communication Line</u> Check" for "SMART ENTRANCE".	С
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"	D
	NOTE: If "NG" is displayed on "CAN COMM" for the diagnosed control unit, replace the control unit.	Е
4.	According to the check sheet results (example), start inspection. Refer to <u>LAN-329</u> , "CHECK SHEET <u>RESULTS (EXAMPLE)</u> "	F
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CHECK SHEET

ENGINE	CAN COMM	CAN CIRC	_	CAN CIRC 2	_	_	CAN CIRC	CAN CIRC 4
A/T	CAN	CAN CIRC	CAN CIRC	_	_		6	CAN CIRC
ABS	COMM CAN	1 CAN CIRC	2 CAN CIRC	_	_			4
AIR PRESSURE	COMM CAN	1 CAN CIRC	2	_				CAN CIRC
MONITOR	COMM CAN	1 CAN CIRC	CAN CIRC		_			2 CAN CIRC
SMART ENTRANCE	COMM	1	2	-	_	_		3
Symptoms:								
Attach copy ENGINE SELF-DIAG RE			ļ	COPY OF VT G RESULTS		SE	Attach copy of ABS ELF-DIAG RESU	
Attach copy AIR PRESSURE N SELF-DIAG RE	MONITOR		SMART E	COPY OF ENTRANCE GRESULTS				
Attach copy ENGINE DATA MON	:		1	n copy of A/T MONITOR			Attach copy of ABS DATA MONITO	
Attach copy AIR PRESSURE M DATA MON	MONITOR		SMART E	COPY OF ENTRANCE MONITOR				
AIR PRESSURE	MONITOR		SMART E	ENTRANCE				
								PKIA077

[CAN]

CHECK SHEET RESULTS (EXAMPLE)

Case 1: Replace ECM

ENGINE	CAN COMM		_	CAN CIRC	_	- 1	CAN CIRC	CAN CIRC
	COMM	CAN CIRC	CAN CIRC	2		·	6	4 CAN CIRC
A/T	COMM			-	-	-	-	
400	CAN	CAN CIRC	CAN CIRC			_		
ABS	COMM	1	2	_	_		_	_
AIR PRESSURE	CAN	CAN CIRC	_	_	_	_	_	CAN CIRC
MONITOR	COMM	1				ļ		2
SMART ENTRANCE	CAN	CAN CIRC	CAN CIRC		_	_	_	CAN CIRC
	COMM	1	2			۱		3
		T						
ENGINE	CAN	CAN CIRC	_	CANORC	_	_	CAN OIRC	CAN OIRC
	COMM	1	0.411.0150	¥.		l	¥	
A/T	CAN COMM		CAN CIRC 2	_	_	_	_	CAN CIRC
	COMM	1 CAN CIRC	CAN CIRC	<u> </u>				4
ABS	COMM		2	-	—	-		-
AIR PRESSURE	CAN		<u> </u>	<u> </u>				CAN CIRC
MONITOR	COMM	1	-	-	_	_	-	2
SMART ENTRANCE	CAN	CAN CIRC	CAN CIRC	_		_	_	CAN CIRC
					—	. —	_	3
	COMM	1	2	·····				
ase 2: Replace TCM		·····						
	CAN	CAN CIRC			_			CAN CIRC
ase 2: Replace TCM ENGINE	CAN	CAN CIRC		CANORC	_		CAN CIRC 6	CAN CIRC
ase 2: Replace TCM	CAN	CAN CIRC	– CAN CIRC					CAN CIRC 4 CAN CIRC
ase 2: Replace TCM ENGINE A/T	CAN	CAN CIRC 1 CAN CIRC 1	– CAN CIRC 2	CAN O'RC	_	_	6 —	CAN CIRC
ase 2: Replace TCM ENGINE A/T ABS	CAN COMM CAN CAN CAN COMM	CAN CIRC 1 CAN CIRC 1 CAN CIRC 1	– CAN CIRC	CAN O'RC - -	-			CAN CIRC 4 CAN CIRC 4 –
ase 2: Replace TCM ENGINE A/T ABS AIR PRESSURE	CAN COMM CAN CAN CAN CAN CAN	CAN CIRC 1 CAN CIRC 1 CAN CIRC	– CAN CIRC 2 CAN CIRC		_	_	6 —	CAN CIRC 4 CAN CIRC
ase 2: Replace TCM ENGINE A/T ABS	CAN COMM CAN CAN COMM CAN COMM	CAN CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1	– CAN CIRC 2 CAN CIRC 2 –	CAN O'RC - - -	_	_	6 —	CAN CIRC 4 CAN CIRC 4 – CAN CIRC 2
ase 2: Replace TCM ENGINE A/T ABS AIR PRESSURE	CAN COMM CAN CAN COMM CAN CAN CAN CAN	CAN CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC	CAN CIRC 2 CAN CIRC 2 CAN CIRC CAN CIRC		_	_	6 —	CAN CIRC 4 CAN CIRC 4 – CAN CIRC 2 CAN CIRC
ase 2: Replace TCM ENGINE A/T ABS AIR PRESSURE MONITOR	CAN COMM CAN CAN COMM CAN COMM	CAN CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1	– CAN CIRC 2 CAN CIRC 2 –	CAN O'RC 	_	_	6 —	CAN CIRC 4 CAN CIRC 4 – CAN CIRC 2
ase 2: Replace TCM ENGINE A/T ABS AIR PRESSURE MONITOR	CAN COMM CAN CAN CAN CAN COMM CAN COMM CAN COMM	CAN CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1	CAN CIRC 2 CAN CIRC 2 CAN CIRC CAN CIRC	-	_	_	6 - - -	CAN CIRC 4 CAN CIRC 4 – CAN CIRC 2 CAN CIRC 3
ase 2: Replace TCM ENGINE A/T ABS AIR PRESSURE MONITOR SMART ENTRANCE	CAN COMM CAN CAN COMM CAN CAN COMM CAN COMM CAN	CAN CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC	CAN CIRC 2 CAN CIRC 2 CAN CIRC CAN CIRC		_	_	6 - - - - - - -	CAN CIRC 4 CAN CIRC 4 - CAN CIRC 2 CAN CIRC 3
ase 2: Replace TCM ENGINE A/T ABS AIR PRESSURE MONITOR	CAN COMM CAN CAN COMM CAN COMM CAN COMM CAN COMM	CAN CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1	- CAN CIRC 2 CAN CIRC 2 - CAN CIRC 2 -	-	-	_	6 - - -	CAN CIRC 4 CAN CIRC 4 - CAN CIRC 2 CAN CIRC 3 CAN CIRC 4
ase 2: Replace TCM ENGINE A/T ABS AIR PRESSURE MONITOR SMART ENTRANCE	CAN COMM CAN CAM CAN COMM CAN COMM CAN COMM CAN COMM	CAN CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC	CAN CIRC 2 CAN CIRC 2 CAN CIRC 2 CAN CIRC 2 CAN QIRC		-	_	6 - - - - - - -	CAN CIRC 4 CAN CIRC 4 - CAN CIRC 2 CAN CIRC 3
ase 2: Replace TCM ENGINE A/T ABS AIR PRESSURE MONITOR SMART ENTRANCE ENGINE A/T	CAN COMM CAN COMM CAN COMM CAN COMM CAN COMM CAN COMM	CAN CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC	CAN CIRC 2 CAN CIRC 2 CAN CIRC 2 CAN CIRC 2	- - - CAN CIRC 2	-	-	6 - - - - - - -	CAN CIRC 4 CAN CIRC 4 - CAN CIRC 2 CAN CIRC 3 CAN CIRC 4
ase 2: Replace TCM ENGINE A/T ABS AIR PRESSURE MONITOR SMART ENTRANCE ENGINE	CAN COMM CAN CAN CAN CAN CAN COMM CAN COMM CAN COMM CAN CAN CAN	CAN CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC	CAN CIRC 2 CAN CIRC 2 CAN CIRC 2 CAN CIRC 2 CAN CIRC CAN CIRC	- - - CAN CIRC 2	-	-	6 - - - - - - -	CAN CIRC 4 CAN CIRC 4 - CAN CIRC 2 CAN CIRC 3 CAN CIRC 4
ase 2: Replace TCM ENGINE A/T ABS AIR PRESSURE MONITOR SMART ENTRANCE ENGINE A/T	CAN COMM CAN COMM CAN COMM CAN COMM CAN COMM CAN COMM	CAN CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC	CAN CIRC 2 CAN CIRC 2 CAN CIRC 2 CAN CIRC 2		- - - - -		6 - - - - - - - - - - - -	CAN CIRC 4 CAN CIRC 4 - CAN CIRC 2 CAN CIRC 3 CAN CIRC 4
ase 2: Replace TCM ENGINE A/T ABS AIR PRESSURE MONITOR SMART ENTRANCE ENGINE A/T ABS	CAN COMM CAN CAN CAN CAN CAN COMM CAN COMM CAN CAN COMM CAN COMM	CAN CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC	CAN CIRC 2 CAN CIRC 2 CAN CIRC 2 CAN CIRC 2 CAN CIRC CAN CIRC		- - - - -		6 - - - - - - - - - - - -	CAN CIRC 4 CAN CIRC 4 - CAN CIRC 2 CAN CIRC 3 CAN CIRC 4 CAN CIRC 4 CAN CIRC
ase 2: Replace TCM ENGINE A/T ABS AIR PRESSURE MONITOR SMART ENTRANCE ENGINE A/T ABS AIR PRESSURE	CAN COMM CAN CAN CAN CAN COMM CAN COMM CAN CAN CAN CAN CAN CAN CAN CAN CAN CAN	CAN CIRC 1 CAN CIRC	CAN CIRC 2 CAN CIRC 2 CAN CIRC 2 CAN CIRC 2 CAN CIRC CAN CIRC		- - - - -		6 - - - - - - - - - - - -	CAN CIRC 4 CAN CIRC 4 CAN CIRC 2 CAN CIRC 3 CAN CIRC 4 CAN CIRC 4 CAN CIRC 4 CAN CIRC

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

ENGINE	CAN	CAN CIRC	_	CAN CIRC	_	_	CAN CIRC	CAN CIRC
ENGINE	COMM	1		2			6	4
АЛ	CAN	CAN CIRC	CAN CIRC		_			CAN CIRC
AI	COMM	1	2	_	_	_	_	4
ABS	CAN	CAN CIRC	CAN CIRC					
ABS	COMM	1	2	_	_	—	_	_
AIR PRESSURE	CAN	CAN CIRC						CAN CIRC
MONITOR	COMM	1	_	_	_	_	_	2
SMART ENTRANCE	CAN	CAN CIRC	CAN CIRC					CAN CIRC
SMARTENTRANCE	COMM	1	2	-	_	-	_	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		_	_	-	_	-
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

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ENGINE	ance control uni CAN	CAN CIRC	_	CAN CIRC	_	_	CAN CIRC	CAN CIRC
A/T	COMM CAN	1 CAN CIRC	CAN CIRC	2	_	_	6	4 CAN CIRC
ABS	COMM CAN	1 CAN CIRC	2 CAN CIRC	_	_	_		4
AIR PRESSURE	COMM CAN	1 CAN CIRC	2	_	_	_		CAN CIRC
MONITOR SMART ENTRANCE	COMM CAN COMM	1 CAN CIRC	CAN CIRC	_		_	_	2 CAN CIRC
SMANT ENTRANCE	COMM	1	2					3
ENGINE	CAN COMM	CAN CIRC	_	CAN CIRC	_	_	CAN CIRC 6	CAN CIRC 4
A/T	CAN COMM	CAN CIRC	CAN CIRC	2	_	_		CAN CIRC 4
ABS	CAN	CAN CIRC	CAN CIRC	_	_	_	_	4
AIR PRESSURE MONITOR	CAN	CAN CIRC	2	_	_	_	_	CAN CIRC
SMART ENTRANCE	CAN	1 CAN CIRC 1	CANOIRC	_	_	_	_	2 CAN O'RC
			-			1		v
ase 6 ENGINE	CAN	CAN CIRC	_	CAN CIRC	_	_	CANORC	CAN OIRC
A/T	COMM CAN	CAN CIRC	CAN CIRC	2	_	_	<u>v</u>	
ABS	COMM CAN	1 CAN CIRC	2 CAN ORC	_	_			V
AIR PRESSURE	COMM CAN	1 CAN CIRC	v	_	_	_	_	CAN CIRC
MONITOR SMART ENTRANCE	COMM CAN	1 CAN CIRC	CANORC		_	_		2 CAN CIRC
	COMM	1	V V					3
ase 7	CAN	CAN CIRC		CAN CIRC		Ι		
ENGINE	COMM CAN		– CAN CIRC	2	_	-		
A/T	CAN COMM CAN	CAN CIRC 1 CAN CIRC	CAN CIRC 2 CAN CIRC	-	-	-	-	
	COMM	1	2	-	_	-	-	
AIR PRESSURE MONITOR	CAN COMM	CAN CIRC	-	-	_	_		CAN CIRC 2
SMART ENTRANCE	CAN COMM	CAN CIRC	CANOIRC	-	_	-	-	CAN CIRC 3

Case 8

ENGINE	CAN COMM	CAN CIRC 1	_	CAN CIRC 2	_	_	CANORC	CANORC
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		1	_	_	-	CAN CIRC 3

Case 9 CAN COMM CAN CAN CANVIRC CANORC ENGINE _ _ _ CANOIRC CAN CAN CIRC CAN CIRC A/T _ _ _ _ COMM 1 4 CANOIRC CAN CIRC CAN ABS _ _ _ _ _ COMM 1 AIR PRESSURE CAN CAN CIRC CAN CIRC _ _ _ _ COMM MONITOR 1 2 CAN CAN CIRC CAN CAN CIRC SMART ENTRANCE _ _ _ _ COMM 1 3

Case 10

ENGINE	CAN	CAN CIRC	_	CAN	_	_	CAN CIRC	CAN CIRC
ENGINE	COMM	1		V V	_	_	6	4
A/T	CAN	CAN O IRC	CAN QIRC	_	_	_	_	CAN O IRC
RI	COMM	N N	Y	_	_	_	_	V.
ABS	CAN	CAN CIRC	CAN CIRC					
AD5	COMM	1	2	_	_	_	_	_
AIR PRESSURE	CAN	CAN CIRC						CAN CIRC
MONITOR	COMM	1	_	_	_	_	_	2
SMART ENTRANCE	CAN	CAN CIRC	CAN CIRC					CAN CIRC
SWANT ENTRANCE	COMM	1	2	_			_	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

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ase 12								
ENGINE	CAN	CAN CIRC	_	CAN CIRC	_	_	CAN CIRC	CAN CIRC
ENGINE	COMM	1		2			6	4
A/T	CAN	CAN CIRC	CAN CIRC				_	CAN CIRC
AI	COMM	1	2	_	_	_	_	4
ABS	CAN	CAN CIRC	CAN CIRC					
ABS	COMM	1	2	_	_	_	_	_
AIR PRESSURE	CAN	CAN QARC						CAN QIRC
MONITOR	COMM	V	_	_	_		_	V 1
OMADE ENERANOE	CAN	CAN CIRC	CAN CIRC					CAN CIRC
SMART ENTRANCE	COMM	1	2	_	_	_	-	3

Case	13	

ase 13								
ENGINE	CAN	CAN CIRC	_	CAN CIRC	_	_	CANORC	CAN CIRC
Ellante	COMM	1		2			Y	4
A/T	CAN	CAN CIRC	CAN CIRC					CAN CIRC
AU	COMM	1	2	_	_	_	_	4
400	CAN	CAN CIRC	CAN CIRC					
ABS	COMM	1	2	_	_	_	_	_
AIR PRESSURE	CAN	CAN CIRC						CAN CIRC
MONITOR	COMM	1	_	_	_	_	_	2
SMART ENTRANCE	CAN	CAN QIRC	CAN QIRC					CAN QHRC
SIVIANT EINTRAINCE	COMM	V	V V	_				V

Case	14
Case	14

ENGINE	CAN COMM	CAN CIRC 1	-	CAN CIRC 2	_	_	CAN CIRC 6	
A/T	CAN COMM	CAN CIRC	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 2	_	_	_	_	CANORC

ENGINE	CAN COMM		-		-	-		
A/T	CAN COMM	CANORC	CANORC	-	_	-	-	
ABS	CAN COMM	CANORC		-	_	-	-	_
AIR PRESSURE MONITOR	CAN COMM	CANORC	-	-	_	-	-	
SMART ENTRANCE	CAN COMM	CANORC	CANORC	-	-	-	-	CANOIRC

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NOTE:

If "NG" is displayed on "CAN COMM" for the diagnosed control unit, replace the control unit.

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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 <u>LAN-334</u>, <u>"Circuit Check Between TCM and ABS Actuator and Electric Unit (control unit)"</u>

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 <u>LAN-338</u>, "ABS Actuator and <u>Electric Unit (control unit) Circuit Check"</u>

Case 12:Check Tyre pressure monitoring control unit Circuit. Refer to <u>LAN-339</u>, "Tyre Pressure Monitoring <u>Control Unit Circuit Check</u>"

Case 13:Check Smart entrance control unit Circuit. Refer to <u>LAN-339</u>, "Smart Entrance Control Unit Circuit <u>Check"</u>

Case 14:Check Combination meter Circuit. Refer to <u>LAN-340, "Combination Meter Circuit Check"</u> Case 15:Check CAN communication Circuit. Refer to <u>LAN-340, "CAN Communication Circuit Check"</u>

Circuit Check Between TCM and ABS Actuator and Electric Unit (control unit)

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).

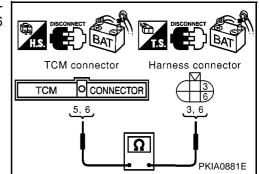
OK or NG

OK >> GO TO 2.

NG >> Repair terminal or connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

- 1. Disconnect TCM connector and harness connector F31.
- 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)
 - 6(R) 6(R)
- OK or NG
- OK >> GO TO 3.
- NG >> Repair harness.



: Continuity should exist.

: Continuity should exist.

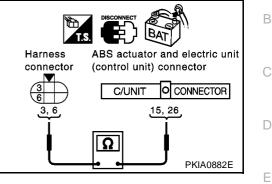
3. CHECK HARNESS FOR OPEN CIRCUIT

- 1. Disconnect ABS actuator and electric unit (control unit) connector.
- 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)
 - 6(R) 15(R)
- : Continuity should exist.

: 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 <u>EC-150, "DTC U1000, U1001 CAN COMMUNI</u>CATION



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 COMMUNICA-TION 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

- **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.

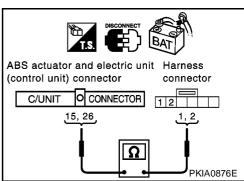
NG >> Repair terminal or connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

- 1. Disconnect ABS actuator and electric unit (control unit) connector and harness connector E120.
- 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)
 - 15(R) 1(R)
- : Continuity should exist. : Continuity should exist.

OK or NG

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



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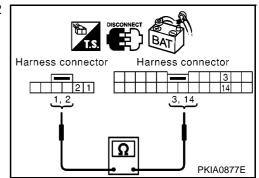
3. CHECK HARNESS FOR OPEN CIRCUIT

- 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).
 - : Continuity should exist. 2(L) - 3(L)
 - 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)14(R) - 5(R)
- : Continuity should exist.

: 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 COMMUNICA-TION 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.

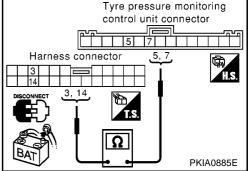
Circuit Check Between Tyre pressure monitoring control unit and Smart **Entrance Control Unit**

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.



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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 Smart entrance connector M41 terminals 8 (L), 11 (R) and tyre pressure monitorcontrol unit connector ing control unit harness connector M96 terminals 7 (L), 5 (R).
 - 8(L) 7(L)
- 11(R) 5(R)
- : Continuity should exist.

: Continuity should exist.

OK or NG

- ູ5, 7 OK >> Reconnect all connectors to perform "SELF-DIAG RESULTS" and "DATA MONITOR" for "ENGINE", "A/T" Ω "ABS", "AIR PRESSURE MONITOR", and "SMART PKIA0861E 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 COMMUNICA-TION 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

- 1. CHECK CONNECTOR
- Turn ignition switch OFF. 1.
- 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.

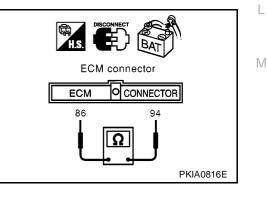
2. CHECK HARNESS FOR OPEN CIRCUIT

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

: Approx. 108 – 132 Ω

OK or NG

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



Tyre pressure monitoring

control unit connector

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TCM Circuit Check

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.

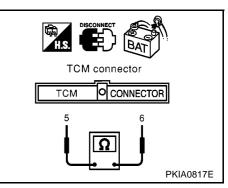
2. CHECK HARNESS FOR OPEN CIRCUIT

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

5(L) - 6(R)

OK or NG

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



ABS Actuator and Electric Unit (control unit) Circuit Check

: Approx. 54 – 66 Ω

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.

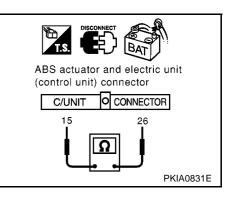
2. CHECK HARNESS FOR OPEN CIRCUIT

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

: Approx. 54 – 66Ω

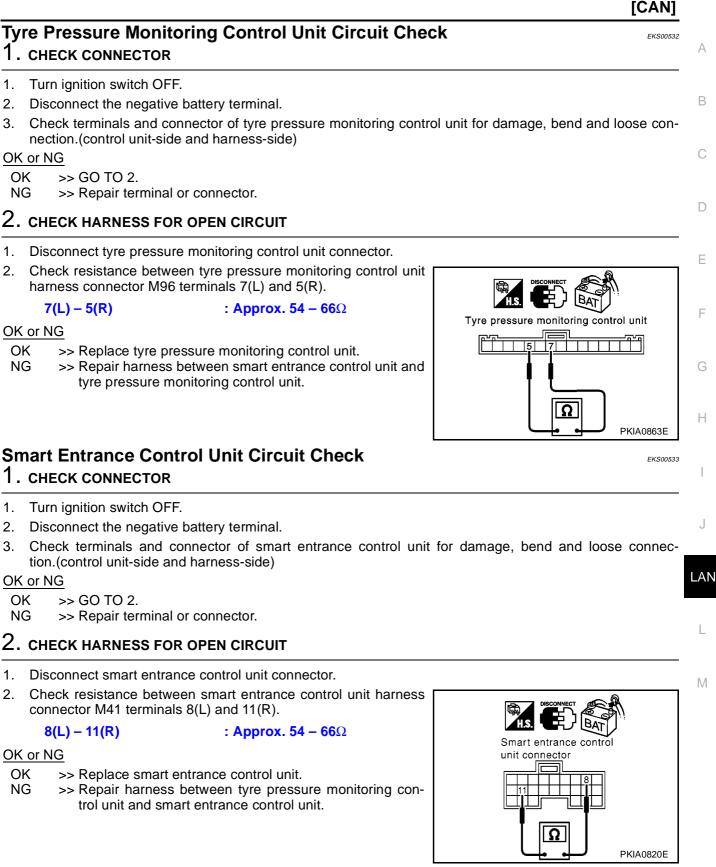
OK or NG

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



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Combination Meter Circuit Check

1. CHECK CONNECTOR

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

: Approx. 108 – 132Ω

OK or NG

OK >> GO TO 2.

NG >> Repair terminal or connector.

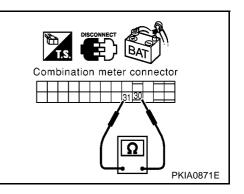
2. CHECK HARNESS FOR OPEN CIRCUIT

- 1. Disconnect combination meter connector.
- Check resistance between combination meter harness connector M37 terminals 30(L) and 31(R).

30(L) – 31(R)

OK or NG

- OK >> Replace combination meter.
- NG >> Repair harness between smart entrance control unit and combination meter.



CAN Communication Circuit Check

1. CHECK CONNECTOR

- 1. Turn ignition switch OFF.
- 2. Disconnect the negative battery terminal.
- 3. Check following terminals and connector for damage, 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.

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: Continuity should not exist. Data link connector 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.

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

6(L) - 3(R)

OK or NG

OK >> GO TO 3.

- NG >> • Repair harness between 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 3(R) – ground : Continuity should not exist. : 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

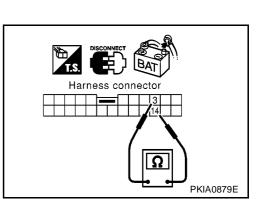
- Disconnect harness connector B107. 1.
- 2. Check continuity between harness connector B101 terminals 3 (L) and 14(R).

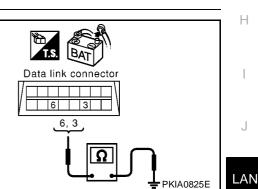
3(L) – 14(R)

: Continuity should not exist.

OK or NG

- OK >> GO TO 5.
- NG >> Repair harness between harness connector B101 and harness connector B107.





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5. CHECK HARNESS FOR SHORT CIRCUIT

Check continuity between harness connector B101 terminals 3 (L), 14(R) and ground.

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

: 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

- Disconnect the following connectors. 1.
- ABS actuator and electric unit (control unit) connector. _
- Harness connector E63.
- Check continuity between ABS actuator and electric unit (control 2. 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

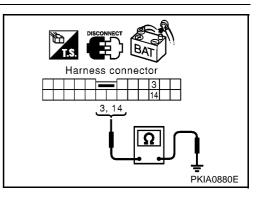
: Continuity should not exist. : Continuity should not exist.

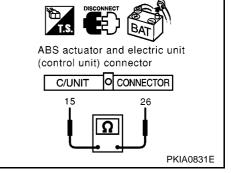
15(R) – ground

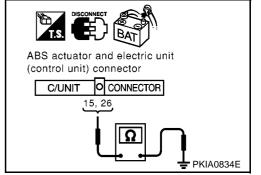
OK or NG

- 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)

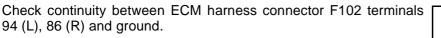
: Continuity should not exist.

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



94(L) – ground

86(R) – ground

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

OK or NG

NG

- OK >> GO TO 10.
 - >> 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"

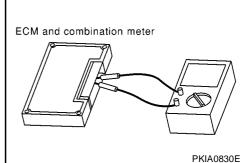
OK or NG

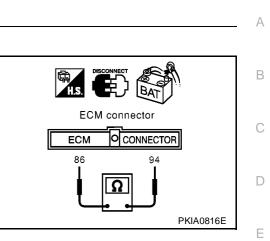
- OK >> Reconnect all connectors to perform "SELF-DIAG RESULTS" and "DATA MONITOR" for "ENGINE", "A/T", "ABS", "AIR PRESSURE MONITOR", and "SMART ENTRANCE" displayed on CONSULT-II. Refer to EC-150, "DTC U1000, U1001 CAN COMMUNICATION LINE" (WITH EURO-OBD) or EC-663, "DTC U1000, U1001 CAN COMMUNICATION 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 Μ "AIR PRESSURE MONITOR". Refer to BCS-40, "CAN Communication Line Check" for "SMART ENTRANCE".
- NG >> Replace ECM and/or Combination meter.

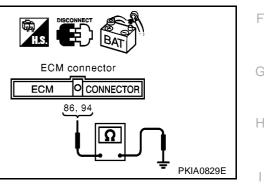
Component Inspection ECM / COMBINATION METER INTERNAL CIRCUIT INSPECTION

- 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	Applox. 100 - 132





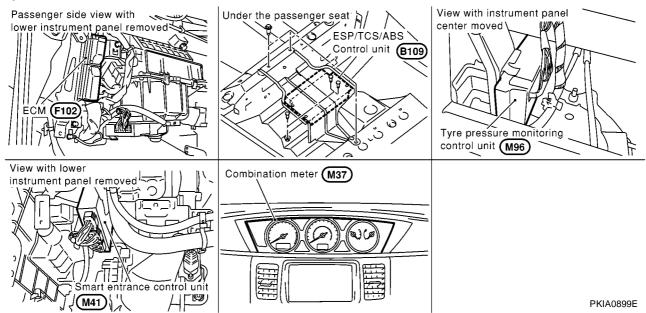


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System Description

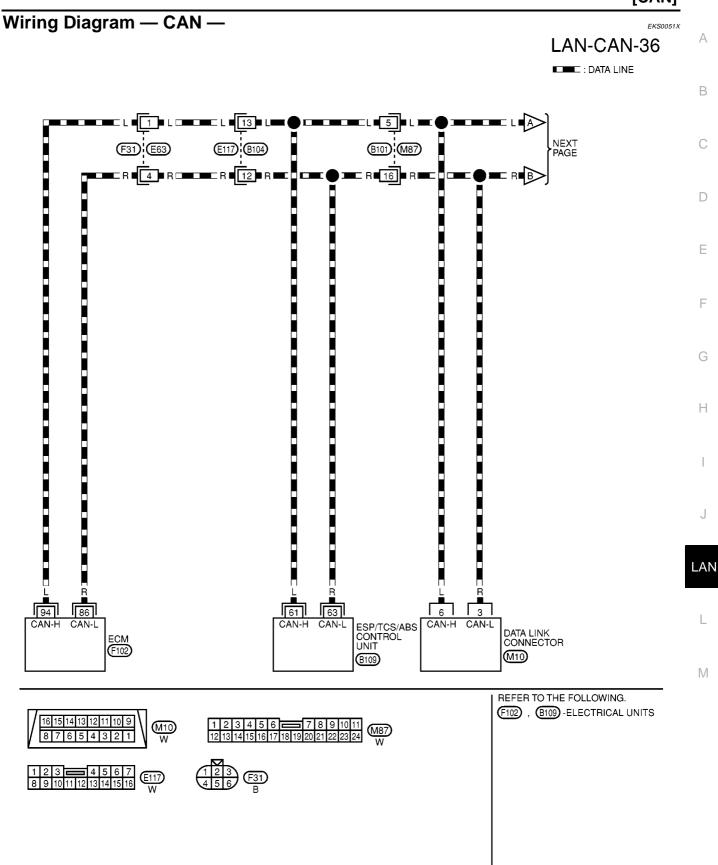
CAN (Controller Area Network) is a serial communication line for real time application. It is an on-vehicle multiplex communication line with high data communication speed and excellent error detection ability. Many electronic control units are equipped onto a vehicle, and each control unit shares information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

Component Parts and Harness Connector Location

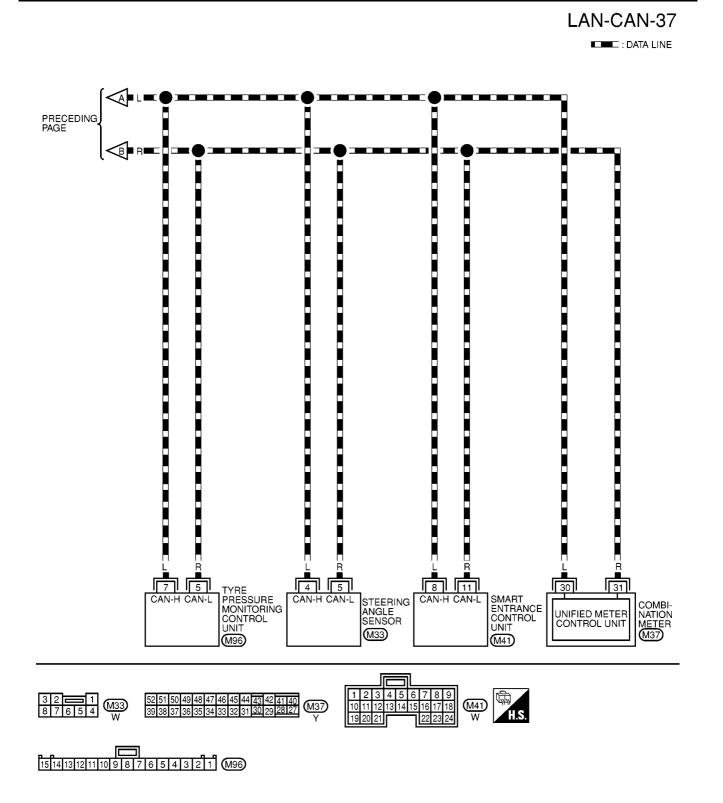


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[CAN]



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MKWA0252E

W	ORK FIOW EKS0051Y	
1.	Print all the data of "SELF-DIAG RESULTS" and "DATA MONITOR" for "ENGINE", "ABS", "AIR PRES- SURE MONITOR", and "SMART ENTRANCE" displayed on CONSULT-II. Refer to <u>EC-1083</u> , "DTC	A
	<u>U1000, U1001 CAN COMMUNICATION LINE</u> " (WITH EURO-OBD) or <u>EC-1505, "DTC U1000, U1001</u> <u>CAN COMMUNICATION LINE</u> " (WITHOUT EURO-OBD) for "ENGINE" and Refer to <u>BRC-107, "Inspec-</u> <u>tion 15 CAN Communication Circuit, ESP/TCS/ABS Control Unit and Steering Angle Sensor</u> " for "ABS".	В
	Refer to <u>WT-35, "Inspection 4: CAN Communication Line"</u> for "AIR PRESSURE MONITOR". Refer to <u>BCS-40, "CAN Communication Line Check"</u> for "SMART ENTRANCE".	С
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 <u>LAN-348, "CHECK SHEET"</u>	D
	NOTE: If "NG" is displayed on "CAN COMM" for the diagnosed control unit, replace the control unit.	F
4.	According to the check sheet results (example), start inspection. Refer to <u>LAN-349</u> , "CHECK SHEET <u>RESULTS (EXAMPLE)"</u>	E
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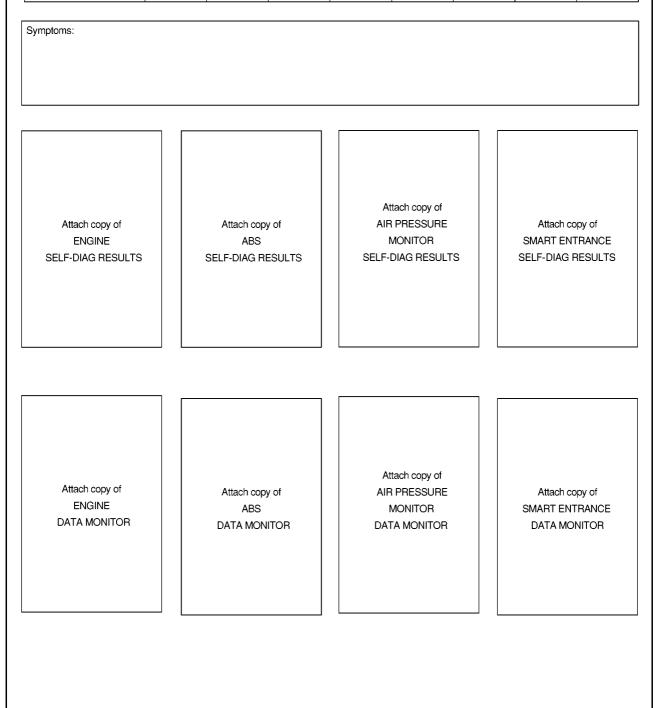
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CHECK SHEET

Check sheet table

Check sheet lable								
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	CAN CIRC 2	-	-	_	-	CAN CIRC 3



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CHECK SHEET RESULTS (EXAMPLE)

ENGINE	CAN COMM	CAN CIRC	_	CAN CIRC	_	_	CAN CIRC	CAN CIRC
ABS	CAN	CAN CIRC	CAN CIRC	3	_	CAN CIRC	6	4
AIR PRESSURE MONITOR	COMM CAN COMM	1 CAN CIRC 1	2	_	_	5	_	CAN CIRC 2
MART ENTRANCE	CAN	CAN CIRC	CAN CIRC	_	_	_	_	CAN CIRC 3
			L	1				0
ENGINE	CAN COMM	CAN CIRC	_	CANORC	_	-	CANORC	CANORC
ABS	CAN COMM	CAN CIRC	CAN CIRC 2	_	_	CAN CIRC 5	_	_
AIR PRESSURE MONITOR	CAN COMM	CAN CIRC	_	_	_	_	_	CAN CIRC 2
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2	-	-	-	-	CAN CIRC 3
ase 2: Replace ESP/TCS//	ABS control uni							
ENGINE	CAN COMM	CAN CIRC	-	CANORC	_	-	CAN CIRC 6	CAN CIRC 4
ABS	CAN COMM	CAN CIRC	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
	0.001							
ENGINE	CAN COMM	CAN CIRC 1	_	CAN CIRC 3	-	-	CAN CIRC 6	CAN CIRC 4
ABS	CAN COMM	CAN CIRC 1	CANOIRC	-	_	CANOIRC	_	_
	CAN	CAN CIRC	-	-	-	-	_	CAN CIRC 2
AIR PRESSURE MONITOR	COMM	1						CAN CIRC
AIR PRESSURE MONITOR	COMM CAN COMM	CAN CIRC	CAN CIRC 2	-	_	-	_	3
AIR PRESSURE	CAN	CAN CIRC		_	_			
AIR PRESSURE MONITOR	CAN COMM	CAN CIRC 1		_				3
AIR PRESSURE MONITOR SMART ENTRANCE 	CAN COMM ure monitoring CAN COMM	CAN CIRC 1 g control unit CAN CIRC 1		CAN CIRC 3			CAN CIRC 6	
AIR PRESSURE MONITOR SMART ENTRANCE use 3: Replace Tyre press ENGINE	CAN COMM	control unit CAN CIRC 1 CAN CIRC 1 CAN CIRC 1				 CAN CIRC 5		3 CAN CIRC
AIR PRESSURE MONITOR SMART ENTRANCE	CAN COMM ure monitoring CAN COMM CAN	CAN CIRC 1 control unit CAN CIRC 1 CAN CIRC	2 CAN CIRC			 CAN CIRC	6	3 CAN CIRC 4

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Case 4: Replace Smart entrance control uni	t
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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	_	-	CANORC	
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	_	_		CANORC
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

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Case 8								
ENGINE	CAN COMM	CANORC	_	CANORC	_	_		CANORC
ABS	CAN COMM	CAN CIRC 1		_	-	CAN CIRC 5	_	_
AIR PRESSURE MONITOR	CAN COMM	CAN CIRC 1	_	_		_	_	CAN CIRC 2
SMART ENTRANCE	CAN COMM	CAN CIRC 1		_	_	_	_	CAN CIRC 3

Case 9

ENGINE	CAN COMM	CAN CIRC 1	-		-	-	CAN CIRC 6	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

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	CANORC	_	_	_	_	_	
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2	_	_	_	_	CAN CIRC 3

Case 11

0436 11								
ENGINE	CAN	CAN CIRC	_	CAN CIRC		_	CAN CIRC	CAN CIRC
ENGINE	COMM	1	_	3	_	_	6	4
ABS	CAN	CAN CIRC	CAN CIRC	_	_	CAN QIRC	_	_
ABS	COMM	1	2			V	_	
AIR PRESSURE	CAN	CAN CIRC	_				_	CAN CIRC
MONITOR	COMM	1	_			_	_	2
SMART ENTRANCE	CAN	CAN CIRC	CAN CIRC	_		_		CAN CIRC
SMARTENTRANCE	COMM	1	2	_		_	_	3

----Case 12

000012								
ENGINE	CAN	CAN CIRC	_	CAN CIRC	_	_	CAN CIRC	CAN CIRC
	COMM	1	CAN CIRC CAN CIRC	4				
ABS	CAN	CAN CIRC	CAN CIRC	_		CAN CIRC		_
ADS	COMM	1	2	_	_	5	_	_
AIR PRESSURE	CAN	CAN CIRC						CAN CIRC
MONITOR	COMM	1	_	_	_	_	_	2
SMART ENTRANCE	CAN	CAN ØIRC	CAN QIRC					CAN Q#RC
SIVIARTENTRANCE	COMM		₹ V	_	-		_	V V

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NOTE:

If "NG" is displayed on "CAN COMM" for the diagnosed control unit, replace the control unit.

ENGINE	CAN COMM	CAN CIRC	-	CAN CIRC 3	_	-	CAN CIRC 6	
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	-	_	CAN CIRC 5	-	_
AIR PRESSURE MONITOR	CAN COMM	CAN CIRC 1	-	_	_	-	-	CANORC
SMART ENTRANCE	CAN	CAN CIRC	CAN CIRC	_	_	_	_	CAN ORC
	COMM	<u> 1</u> 	2				·	
se 14 ENGINE	CAN					 		
se 14	CAN COMM CAN	CAN O/RC CAN O/RC	– CAN CIRC					
se 14 ENGINE	CAN COMM	✓	_	CAN QIRC 	- - -			

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

1. CHECK CONNECTOR

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- Turn ignition switch OFF. 1.
- Disconnect the negative battery terminal. 2.
- 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.
- >> Repair terminal or connector. NG

LAN-352

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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 В connector B109 terminals 61 (L), 63 (R) and harness connector B101 terminals 5 (L), 16 (R). Harness connector ESP/TCS/ABS 61(L) - 5(L): Continuity should exist. control unit 16 63(R) - 16(R): Continuity should exist. connector 5, 16 C/UNIT **O** CONNECTOR OK or NG 61, 63 OK >> GO TO 3. NG >> Repair harness. Ω PKIA0867E E 3. CHECK HARNESS FOR OPEN CIRCUIT Disconnect tyre pressure monitoring control unit connector. 1. F Check continuity between harness connector M87 terminals 5 2. Tyre pressure monitoring (L), 16 (R) and tyre pressure monitoring control unit harness control unit connector connector M96 terminals 7 (L), 5 (R). 51 7 5(L) - 7(L): Continuity should exist. Harness connector 5.7 16(R) - 5(R): Continuity should exist. 5. Н 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-PKIA0883E 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, LAN "CAN Communication Line Check" for "SMART ENTRANCE". NG >> Repair harness. Circuit Check Between Tyre Pressure Monitoring Control Unit and Steering **Angle Sensor** EK\$0052M

- 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

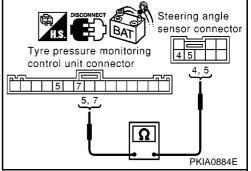
- 1. Disconnect tyre pressure monitoring control unit connector and steering angle sensor connector.
- Check continuity between tyre pressure monitoring control unit 2. harness connector M96 terminals 7 (L), 5 (R) and steering angle sensor harness connector M33 terminals 4 (L), 5 (R).
 - 7(L) 4(L)
 - 5(R) 5(R)

: Continuity should exist.

: 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

- Turn ignition switch OFF. 1.
- 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

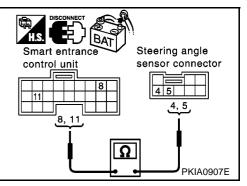
- Disconnect smart entrance control unit connector and steering angle sensor connector. 1.
- 2. Check continuity between smart entrance control unit harness connector M41 terminals 8 (L), 11 (R) and steering angle sensor harness connector M33 terminals 4 (L), 5 (R).

8(L) - 4(L)11(R) - 5(R) : Continuity should exist.

: 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.

LAN-354

[CAN] **ECM Circuit Check** EKS00521 А 1. CHECK CONNECTOR 1. Turn ignition switch OFF. В 2. Disconnect the negative battery terminal. 3. Check following terminals and connector for damage, bend and loose connection. (control module-side and harness-side) С ECM. Harness connector F31. Harness connector E63. D Harness connector E117. Harness connector B104. OK or NG E OK >> GO TO 2. NG >> Repair terminal or connector. F 2. CHECK HARNESS FOR OPEN CIRCUIT Disconnect ECM connector. 1. Check resistance between ECM harness connector F102 termi-2. nals 94(L) and 86(R). 94(L) - 86(R) : Approx. 108 – 132 Ω Н ECM connector OK or NG **CONNECTOR** OK >> Replace ECM. ECM >> Repair harness between ESP/TCS/ABS control unit and NG 86 94 ECM. J

ESP/TCS/ABS Control Unit Circuit Check

1. CHECK CONNECTOR

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PKIA0816E

EKS00522

- 1. Turn ignition switch OFF.
- 2. Disconnect the negative battery terminal.
- Check following terminals and connector of ESP/TCS/ABS control unit for damage, bend and loose con-3. nection. (control unit-side and harness-side)

OK or NG

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

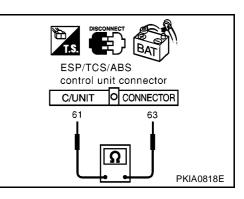
2. CHECK HARNESS FOR OPEN CIRCUIT

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

: Approx. 54 – 66 Ω 61(L) - 63(R)

OK or NG

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



LAN-355

Tyre Pressure Monitoring Control Unit Circuit Check

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

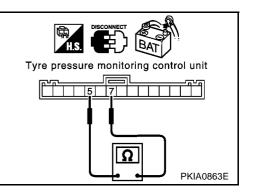
- 1. Disconnect tyre pressure monitoring control unit connector.
- Check resistance between tyre pressure monitoring control unit harness connector M96 terminals 7(L) and 5(R).

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

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. (sensorside and harness-side)

OK or NG

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

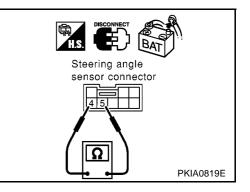
2. CHECK HARNESS FOR OPEN CIRCUIT

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

: **Approx**. **54** – **66**Ω

OK or NG

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



EKS00523

[CAN]

CAN SYSTEM (TYPE 17)	NI
Smart Entrance Control Unit Circuit Check	00524
1. CHECK CONNECTOR	
 Turn ignition switch OFF. Disconnect the negative battery terminal. 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. 	ec-
NG >> Repair terminal or connector.	
2. CHECK HARNESS FOR OPEN CIRCUIT	
 Disconnect smart entrance control unit connector. Check resistance between smart entrance control unit harness connector M41 terminals 8(L) and 11(R). 	E
$8(L) - 11(R)$: Approx. $54 - 66\Omega$ Smart entrance control unit connectorOK or NGUnit connector	F
OK >> Replace smart entrance control unit.	(
NG >> Repair harness between steering angle sensor and smart entrance control unit.	
NG >> Repair harness between steering angle sensor and smart entrance control unit.	-
NG >> Repair harness between steering angle sensor and smart entrance control unit.	E
NG >> Repair harness between steering angle sensor and smart entrance control unit. Combination Meter Circuit Check 1. CHECK CONNECTOR	E
NG >> Repair harness between steering angle sensor and smart entrance control unit. Combination Meter Circuit Check	00525
NG >> Repair harness between steering angle sensor and smart entrance control unit. Combination Meter Circuit Check 1. CHECK CONNECTOR 1. Turn ignition switch OFF. 2. Disconnect the negative battery terminal.	ide
NG >> Repair harness between steering angle sensor and smart entrance control unit. Combination Meter Circuit Check 1. CHECK CONNECTOR 1. Turn ignition switch OFF. 2. Disconnect the negative battery terminal. 3. Check terminals and connector of combination meter for damage, bend and loose connection.(meter-s and harness-side) OK or NG OK >> GO TO 2.	00525
 NG >> Repair harness between steering angle sensor and smart entrance control unit. Combination Meter Circuit Check CHECK CONNECTOR Turn ignition switch OFF. Disconnect the negative battery terminal. Check terminals and connector of combination meter for damage, bend and loose connection.(meter-s and harness-side) OK or NG OK >> GO TO 2. NG >> Repair terminal or connector. 	ide
 NG >> Repair harness between steering angle sensor and smart entrance control unit. Combination Meter Circuit Check CHECK CONNECTOR I. Turn ignition switch OFF. Disconnect the negative battery terminal. Check terminals and connector of combination meter for damage, bend and loose connection.(meter-s and harness-side) OK or NG OK or NG OK >> GO TO 2. 	ide
NG >> Repair harness between steering angle sensor and smart entrance control unit. Combination Meter Circuit Check	ide
NG >> Repair harness between steering angle sensor and smart entrance control unit. Combination Meter Circuit Check	ide
 NG >> Repair harness between steering angle sensor and smart entrance control unit. Combination Meter Circuit Check CHECK CONNECTOR Turn ignition switch OFF. Disconnect the negative battery terminal. Check terminals and connector of combination meter for damage, bend and loose connection.(meter-s and harness-side) OK or NG OK >> GO TO 2. NG >> Repair terminal or connector. CHECK HARNESS FOR OPEN CIRCUIT Disconnect combination meter connector. Check resistance between combination meter harness connector. 	ide

CAN Communication Circuit Check

1. CHECK CONNECTOR

- 1. Turn ignition switch OFF.
- 2. Disconnect the negative battery terminal.
- 3. Check following terminals and connector for damage, 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

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OK >> GO TO 2.
```

NG >> Repair terminal or connector.

2. CHECK HARNESS FOR SHORT CIRCUIT

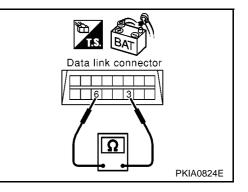
- 1. Disconnect the following connectors.
- Combination meter connector.
- Smart entrance control unit connector.
- Steering angle sensor connector.
- Tyre pressure monitoring control unit connector.
- Harness connector M87.
- Check continuity between Data link connector M10 terminals 6 (L) and 3(R).
 - 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),	Г
3(R) and ground.	

- 6(L) ground
- 3(R) ground

: Continuity should not exist.

: 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.
- 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

- > Repair harness between ESP/TCS/ABS control unit and harness connector B101.
 - Repair harness between harness connector B104 and harness connector B101.



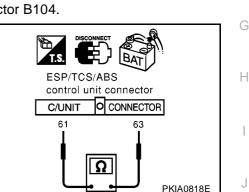
Check continuity between ESP/TCS/ABS control unit harness connector B109 terminals 61 (L), 63 (R) and ground.

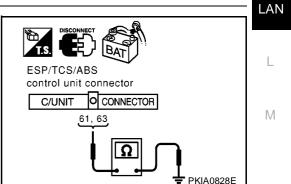
- 61(L) ground
- 63(R) ground

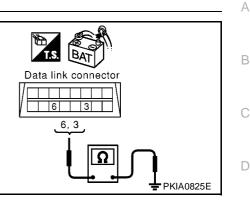
: Continuity should not exist. : Continuity should not exist.

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.







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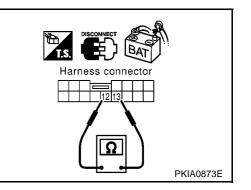
6. CHECK HARNESS FOR SHORT CIRCUIT

- 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.

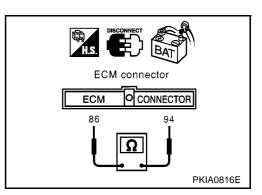
8. CHECK HARNESS FOR SHORT CIRCUIT

- Disconnect ECM connector. 1.
- 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

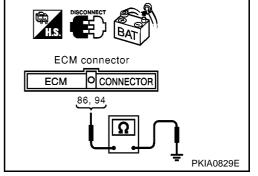
: Continuity should not exist.

86(R) – ground

: Continuity should not exist.

OK or NG

- OK >> GO TO 10.
- NG >> Repair harness between ECM and harness connector F31.



Harness connecto 12 13 12, 13 PKIA0874E

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10. ECM / COMBINATION METER INTERNAL CIRCUIT INSPECTION

Check components inspection. Refer to <u>LAN-361</u>, "ECM / COMBINATION METER INTERNAL CIRCUIT <u>INSPECTION"</u>

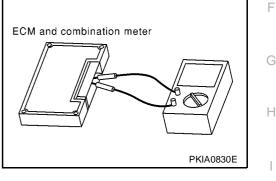
OK or NG

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

Component Inspection 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	Applox. 100 - 132

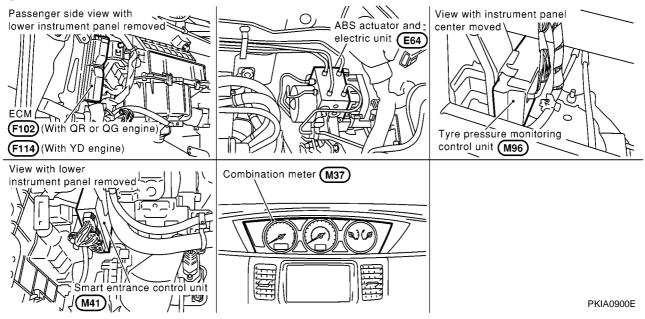


LAN

System Description

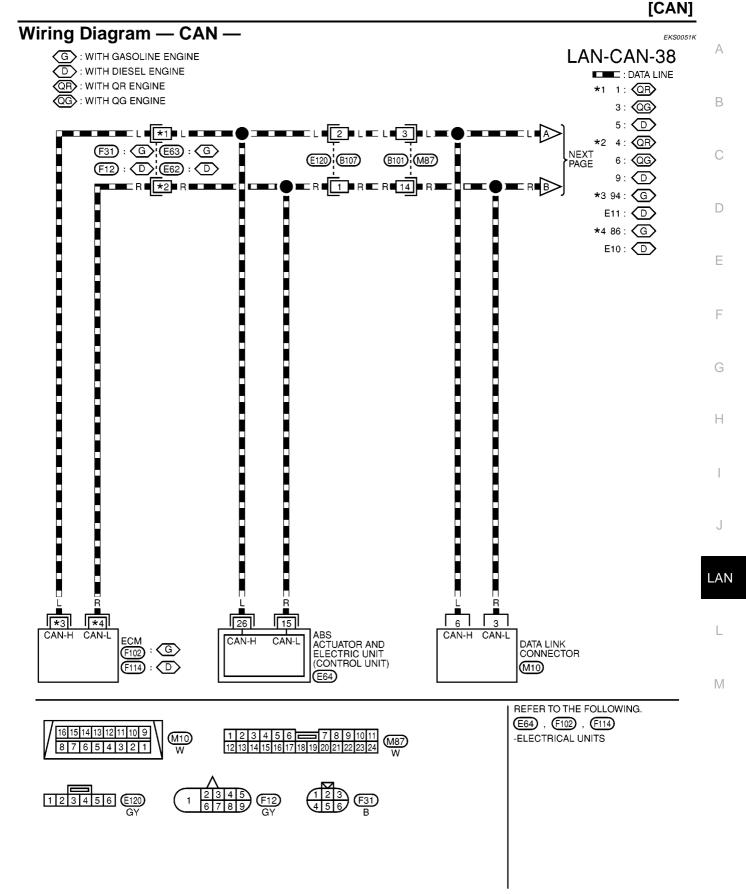
CAN (Controller Area Network) is a serial communication line for real time application. It is an on-vehicle multiplex communication line with high data communication speed and excellent error detection ability. Many electronic control units are equipped onto a vehicle, and each control unit shares information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

Component Parts and Harness Connector Location

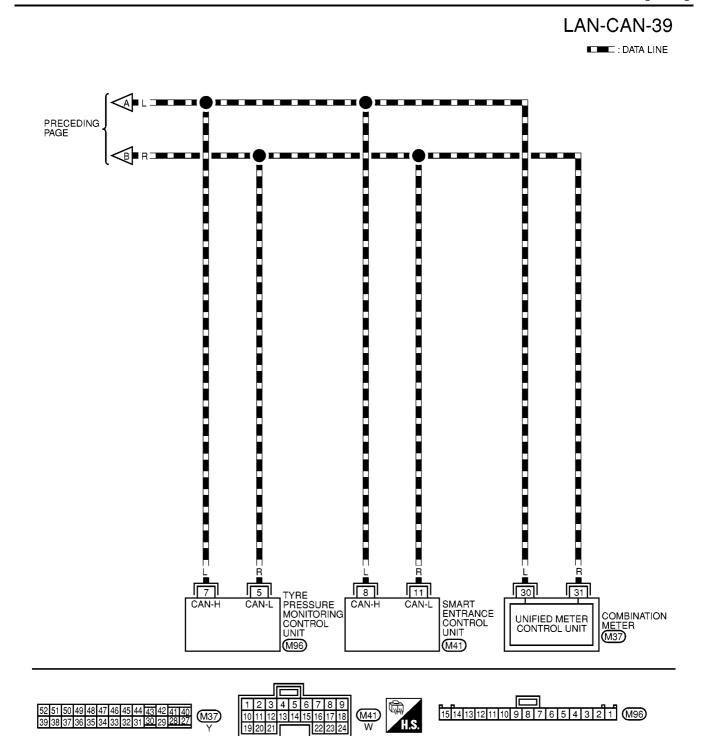


[CAN]

EKS0051J



MKWA0253E



[CAN]

EKS0051L

Work Flow

1.	Print all the data of "SELF-DIAG RESULTS" and "DATA MONITOR" for "ENGINE", "ABS", "AIR PRES- SURE MONITOR", and "SMART ENTRANCE" displayed on CONSULT-II. Refer to <u>EC-150</u> , " <u>DTC U1000</u> ,	А
	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-	В
	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	C
	"ENGINE" and Refer to <u>BRC-33, "CAN Communication Circuit"</u> for "ABS". Refer to <u>WT-35, "Inspection 4:</u>	0
	CAN Communication Line ["] for "AIR PRESSURE MONITOR". Refer to <u>BCS-40</u> , "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	D

- ۷. Allach ine 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 F RESULTS (EXAMPLE)"

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CHECK SHEET

ENGINE	CAN COMM	CAN CIRC 1	—			-	CAN CIRC
ABS AIR PRESSURE	CAN COMM	CAN CIRC 1	CAN CIRC 2	_	-	-	-
MONITOR	CAN COMM	CAN CIRC 1	-	-	-	-	CAN CIRC
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2	_	-	-	CAN CIRC
ymptoms:							
Attach copy of ENGINE SELF-DIAG RESULT	rs si	Attach copy of ABS ELF-DIAG RESU	LTS	Attach co AIR PRES MONITO SELF-DIAG R	SURE DR	SMART	h copy of ENTRANCE AG RESULTS
Attach copy of ENGINE DATA MONITOR		Attach copy of ABS DATA MONITO	R	Attach cc AIR PRES MONIT DATA MON	SURE OR	SMART	h copy of ENTRANCE MONITOR

CHECK SHEET RESULTS (EXAMPLE)

CIRC 1 CAN CIRC 2 -	VIONITOR	CANCOMM	CAN CIRC 1		—	_	- 1	CAN CIRC 4
CIRC 1 - - - CAN CIRC 2 CIRC 1 CAN CIRC 2 - - - CAN CIRC 3 CIRC 1 - - - - CAN CIRC 3 CIRC 1 - - - - CAN CIRC 3 CIRC 1 - - - - - CIRC 1 - - - - - CIRC 1 - - - - - CIRC 1 - - - - CAN CIRC 2 CIRC 1 CAN CIRC 2 - - - CAN CIRC 3	AIR PRESSURE MONITOR SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2	_	_	_	-
CIRC 1 - - - CAN QRC 4 CIRC 1 CAN CIRC 2 - - - CIRC 1 - - - - CIRC 1 - - - - CIRC 1 - - - - - CIRC 1 - - - - CAN CIRC 2 CIRC 1 CAN CIRC 2 - - - CAN CIRC 3 Ol unity CIRC 1 - - - CAN CIRC 4 CIRC 1 CAN CIRC 2 - - - - CIRC 1 - - - - CAN CIRC 2 CIRC 1 - - - - CAN CIRC 2 CIRC 1 - - - - CAN CIRC 4 CIRC 1 - - - - - - CIRC 1 - - - - - - - CIRC 1 - - - - - - - CIRC 1		CAN COMM	CAN CIRC 1	_	-	_	_	CAN CIRC 2
CIRC 1 - - - CANORC 4 CIRC 1 CAN CIRC 2 - - - - CIRC 1 - - - - - - CIRC 1 - - - - - - - CIRC 1 - - - - - CAN CIRC 2 - - - CAN CIRC 3 Ol unit) CIRC 1 - - - - CAN CIRC 4 CIRC 1 CAN CIRC 2 -	SMAIL ENTRANCE	CAN COMM	CAN CIRC 1					CAN CIRC 3
CIRC 1 CAN CIRC 2 - - - - CIRC 1 - - - - CAN CIRC 2 - CIRC 1 CAN CIRC 2 - - - CAN CIRC 3 Ol unit) CIRC 1 - - - CAN CIRC 3 CIRC 1 CAN CIRC 2 - - - CAN CIRC 4 CIRC 1 CAN CIRC 2 - - - - CIRC 1 - - - - - CIRC 1 - - - - - CIRC 1 - - - - CAN CIRC 2 CIRC 1 - - - - CAN CIRC 3 CIRC 1 - - - - - CIRC 1 <td></td> <td>OAN COMM</td> <td>OANOINOT</td> <td>OAN OIN 02</td> <td></td> <td></td> <td></td> <td>OANOINOS</td>		OAN COMM	OANOINOT	OAN OIN 02				OANOINOS
CIRC 1 CAN CIRC 2 - - - - CIRC 1 - - - - CAN CIRC 2 - CIRC 1 CAN CIRC 2 - - - CAN CIRC 3 Ol unit) CIRC 1 - - - CAN CIRC 3 CIRC 1 CAN CIRC 2 - - - CAN CIRC 4 CIRC 1 CAN CIRC 2 - - - - CIRC 1 - - - - - CIRC 1 - - - - - CIRC 1 - - - - CAN CIRC 2 CIRC 1 - - - - CAN CIRC 3 CIRC 1 - - - - - CIRC 1 <td>ENGINE</td> <td>CAN COMM</td> <td>CAN CIRC 1</td> <td></td> <td>_</td> <td>_</td> <td>_</td> <td>CANCERC 4</td>	ENGINE	CAN COMM	CAN CIRC 1		_	_	_	CANCERC 4
CIRC 1 - - - CAN CIRC 2 CIRC 1 CAN CIRC 2 - - - CAN CIRC 2 ol unit) CIRC 1 - - - CAN CIRC 3 CIRC 1 - - - CAN CIRC 4 CIRC 1 - - - CAN CIRC 4 CIRC 1 CAN CIRC 2 - - - CIRC 1 - - - - CIRC 1 - - - CAN CIRC 2 CIRC 1 - - - CAN CIRC 3 CIRC 1 - - - CAN CIRC 4 CIRC 1 - - - -	ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	_	-	_	_
Ol unit) CIRC 1 - - - CAN CIRC 4 CIRC 1 CAN CIRC 2 - - - - - CIRC 1 CAN CIRC 2 - - - - - - CIRC 1 - - - - - - - - CIRC 1 - - - - - CAN CIRC 2 - - - CAN CIRC 3 CIRC 1 - <	AIR PRESSURE MONITOR	CAN COMM	CAN CIRC 1	_	-	-	_	CAN CIRC 2
CIRC 1 - - - CAN CIRC 4 CIRC 1 CAN CIRC 2 - - - CIRC 1 CAN CIRC 2 - - - CIRC 1 - - - - CIRC 1 - - - - CIRC 1 - - - CAN CIRC 2 CIRC 1 CAN CIRC 2 - - - CIRC 1 - - - - CAN CIRC 2	SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2	_	_	_	CAN CIRC 3
init	ase 2: Replace ABS actuat ENGINE ABS AIR PRESSURE MONITOR SMART ENTRANCE ENGINE ABS AIR PRESSURE MONITOR SMART ENTRANCE	CAN COMM CAN COMM CAN COMM CAN COMM CAN COMM CAN COMM CAN COMM	CAN CIRC 1 CAN CIRC 1	CAN CIRC 2 CAN CIRC 2 CAN CIRC 2 CAN CRC 2 -	- - - - - -		- - - - -	CAN CIRC 2 CAN CIRC 3 CAN CIRC 4 CAN CIRC 4 CAN CIRC 2
		-			_	_	_	CAN CIBC 4
	ABS			CAN CIRC 2	_	_	_	-
		CANCOMM	CAN CIRC 1	_	_	_	_	CAN CIRC 2
	SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2	_	_	_	CAN CIRC 3
	ase 4: Replace Smart entra ENGINE ABS AIR PRESSURE MONITOR	ance control unit CAN COMM CAN COMM CAN COMM	CAN CIRC 1 CAN CIRC 1 CAN CIRC 1	– CAN CIRC 2	 			CAN CIRC 4 — CAN CIRC 2
CIRC 1 — — — CAN CIRC 4 CIRC 1 CAN CIRC 2 — — —		CANCOMM	CAN CIRC 1	CAN CIRC 2	—	_	—	CAN CIRC 3
CIRC 1 - - - CAN CIRC 4 CIRC 1 CAN CIRC 2 - - - CIRC 1 - - - -	SMART ENTRANCE							
CIRC 1 - - - CAN CIRC 4 CIRC 1 CAN CIRC 2 - - - CIRC 1 - - - CAN CIRC 2 CIRC 1 CAN CIRC 2 - - CAN CIRC 3								
CIRC 1 - - - CAN CIRC 4 CIRC 1 CAN CIRC 2 - - - CIRC 1 - - - CAN CIRC 2 CIRC 1 CAN CIRC 2 - - - CIRC 1 - - - CAN CIRC 3	ENGINE	CAN COMM	CAN CIRC 1	-				CAN CIRC 4
CIRC 1 - - - CAN CIRC 4 CIRC 1 CAN CIRC 2 - - - CIRC 1 - - - CAN CIRC 2 CIRC 1 CAN CIRC 2 - - CAN CIRC 3 CIRC 1 - - - -	ENGINE ABS	CAN COMM	CAN CIRC 1	– CAN CIRC 2				_
CIRC 1 - - - CAN CIRC 4 CIRC 1 CAN CIRC 2 - - - CIRC 1 - - - CAN CIRC 2 CIRC 1 - - - CAN CIRC 3 CIRC 1 - - - - CIRC 1 - - - CAN CIRC 2				-	_	_	_	– CAN CIRC 2
CIRC 1 - - - CAN CIRC 4 CIRC 1 CAN CIRC 2 - - - - CIRC 1 CAN CIRC 2 - - - - - CIRC 1 - - - - - CAN CIRC 2 -	ase 3: Replace Tyre press ENGINE ABS AIR PRESSURE MONITOR	CAN COMM CAN COMM CAN COMM	ontrol unit CAN CIRC 1 CAN CIRC 1	– CAN CIRC 2 –				CAN CIRC — CAN CIRC :
	MART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2	_	-	_	CAN CIRC 3
		0,110001111		0,410,110,2				0, 11 011 10 0
					_			
	ENGINE ABS AIR PRESSURE	CAN COMM CAN COMM CAN COMM	CAN CIRC 1 CAN CIRC 1 CAN CIRC 1	CAN CIRC 2 -	_ _ _ _	- - -	_	CAN CIRC 2 CAN CIRC 3
CIRC 1 - - - CAN CIRC 4 CIRC 1 CAN CIRC 2 - - - CIRC 1 - - - CAN CIRC 2 CIRC 1 CAN CIRC 2 - - - CIRC 1 - - - CAN CIRC 3	ENGINE ABS AIR PRESSURE	CAN COMM	CAN CIRC 1	– CAN CIRC 2 –	_	_	_	_

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ENGINE	CAN COMM	CAN CIRC 1		_	_	_	CANORC 4
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	_	_	_	_
AIR PRESSURE	CAN COMM	CAN CIRC 1	_	_	_	_	CANORC
MONITOR SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CARC 2				CAN CIRC 3
ase 7							
ENGINE	CAN COMM	CANORC 1	—	-	_	—	
ABS	CAN COMM	CAN CIRC 1	CAN CRC 2	-	_	_	-
AIR PRESSURE MONITOR	CAN COMM	CAN CIRC 1	-	-	-	-	CAN CIRC 2
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CRC 2	-	-	-	CAN CIRC 3
ase 8					·	1	
ENGINE		CAN CIRC 1		-	_		CAN CIRC 4
ABS AIR PRESSURE	CAN COMM	CANORC 1	CAN CRC 2	-	_	-	
MONITOR	CAN COMM	CAN CIRC 1	-	-	_	_	CAN CIRC 2
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2	-	-	-	CAN CIRC 3
ase 9		· · · · · ·			1	1	
ENGINE ABS		CAN CIRC 1 CAN CIRC 1		-	_	_	CAN CIRC 4
AIR PRESSURE	CAN COMM CAN COMM	CAN CIRC 1	CAN CIRC 2	_			CANORC:
MONITOR SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2	_	_	_	CAN CIRC
ase 10			·_·_·			·· _ · _ · _ ·	
ENGINE ABS	CAN COMM CAN COMM	CAN CIRC 1 CAN CIRC 1	CAN CIRC 2				
AIR PRESSURE	CAN COMM	CAN CIRC 1		_	_		CAN CIRC 2
MONITOR SMART ENTRANCE	CAN COMM	CANORC 1	CAN CARC 2	_	_		CANORC
ase 11							
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AIR PRESSURE							
MONITOR	CAN COMM	CAN CIRC 1	_	-	_	_	-
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2	-	-	_	CANCIRC
ase 12							
ENGINE	CAN COMM	CANORC 1		-	_	-	CAN CARC 4
ABS AIR PRESSURE	CAN COMM	CANORC 1	CAN CRC 2	-	_	_	-
MONITOR	CAN COMM	CANCERC 1	-	-	-	-	CANCIRC 2
SMART ENTRANCE	CAN COMM	CANORC 1	CAN VRC 2	-	_	_	CANVIRCS

NOTE:

If "NG" is displayed on "CAN COMM" for the diagnosed control unit, replace the control unit.

LAN-368

[CAN]	
INSPECTION	
Proceed trouble diagnosis according to the check sheet results (example).	А
Case 1:Replace ECM.	
Case 2:Replace ABS actuator and electric unit (control unit).	
Case 3:ReplaceTyre pressure monitoring control unit.	В
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	С
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 Elec-	D
tric Unit (control unit) Circuit Check"	
Case 9:Check Tyre pressure monitoring control unit Circuit. Refer to LAN-373, "Tyre Pressure Monitoring Con- trol Unit Circuit Check"	E
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"	F
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 1. CHECK CONNECTOR	G
1. Turn ignition switch OFF.	Н
2. Disconnect the negative battery terminal.	
 Check following terminals and connector for damage, bend and loose connection. (control unit-side and harness-side) 	I
Tyre pressure monitoring control unit.	
	J
Between tyre pressure monitoring control unit and ABS actuator and electric unit (control unit).	
OK or NG	
OK >> GO TO 2.	LAI
NG >> Repair terminal or connector.	
2. CHECK HARNESS FOR OPEN CIRCUIT	I
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).	M

- 26(L) 2(L) 15(R) - 1(R)
- : Continuity should exist.

ABS actuator and electric unit Harness

Ω

connector

12

1,2

PKIA0876E

(control unit) connector

C/UNIT O CONNECTOR

15, 26

: Continuity should exist.

OK or NG

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

3. CHECK HARNESS FOR OPEN CIRCUIT

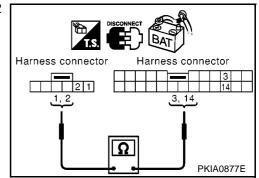
- 1. Disconnect harness connector B101.
- Check continuity between harness connector B107 terminals 2 (L), 1 (R) and harness connector B101 terminals 3 (L), 14 (R).
 - 2(L) 3(L) : Contin
 - 1(R) 14(R)

: Continuity should exist.

: Continuity should exist.

OK or NG

- OK >> GO TO 4.
- NG >> Repair harness.



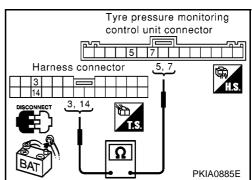
4. CHECK HARNESS FOR OPEN CIRCUIT

- 1. Disconnect tyre pressure monitoring control unit connector.
- 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) 14(R) – 5(R)
- : Continuity should exist.

: 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 <u>EC-</u> 150, "DTC U1000, U1001 CAN COMMUNICATION



LINE" (QG ENGINE MODELS WITH EURO-OBD), <u>EC-663</u>, "DTC U1000, U1001 CAN COMMU-NICATION LINE" (QG ENGINE MODELS WITHOUT EURO-OBD), <u>EC-1083</u>, "DTC U1000, U1001 CAN COMMUNICATION LINE" (QR ENGINE MODELS WITH EURO-OBD), <u>EC-1505</u>, "DTC U1000, U1001 CAN COMMUNICATION LINE" (QR ENGINE MODELS WITHOUT EURO-OBD) or <u>EC-1790</u>, "DTC U1000 CAN COMMUNICATION LINE" (YD ENGINE MODELS) for "ENGINE" and Refer to <u>BRC-33</u>, "CAN Communication Circuit" for "ABS". Refer to <u>WT-35</u>, "Inspection 4: CAN Communication Line" for "AIR PRESSURE MONITOR". Refer to <u>BCS-40</u>, "CAN Communication Line Check" for "SMART ENTRANCE".

NG >> Repair harness.

Circuit Check Between Tyre pressure monitoring control unit and Smart Entrance Control Unit

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.

EKS0051N

А

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)

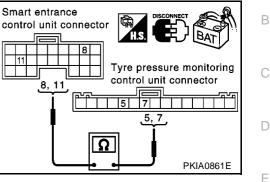
: Continuity should exist.

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 COMMU-NICATION 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-F 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

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

NG >> Repair terminal or connector. Μ

J

Н

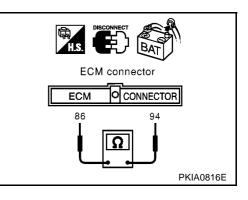
EKS00510

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



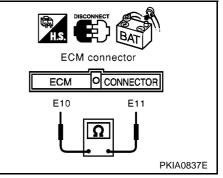
 Resistance between ECM harness connector F114 terminals E11(L) and E10(R).(Diesel engine models)

E11(L) – E10(R) (Diesel enging models)

: **Approx. 108 – 132**Ω

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

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.

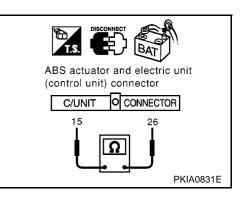
2. CHECK HARNESS FOR OPEN CIRCUIT

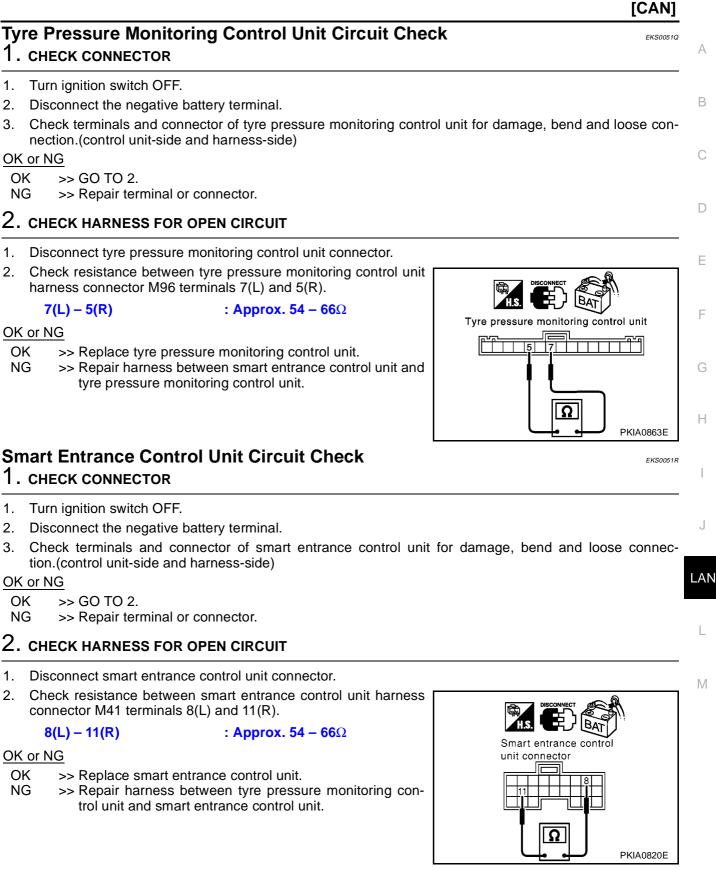
- 1. Disconnect ABS actuator and electric unit (control unit) connector.
- Check resistance between ABS actuator and electric unit (control unit) harness connector E64 terminals 26(L) and 15(R).

26(L) – **15(R)** : Approx. **54** – **66**Ω

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).





Combination Meter Circuit Check

1. CHECK CONNECTOR

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

: Approx. 108 – 132Ω

OK or NG

OK >> GO TO 2.

NG >> Repair terminal or connector.

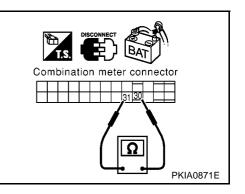
2. CHECK HARNESS FOR OPEN CIRCUIT

- 1. Disconnect combination meter connector.
- Check resistance between combination meter harness connector M37 terminals 30(L) and 31(R).

30(L) – 31(R)

OK or NG

- OK >> Replace combination meter.
- NG >> Repair harness between smart entrance control unit and combination meter.



CAN Communication Circuit Check

1. CHECK CONNECTOR

- 1. Turn ignition switch OFF.
- 2. Disconnect the negative battery terminal.
- 3. Check following terminals and connector for damage, 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.

EKS0051T

[CAN]

Smart entrance control unit connector. Tyre pressure monitoring control unit connector. Harness connector M87. Check continuity between Data link connector M10 terminals 6 (L) and 3(R). 6(L) - 3(R): Continuity should not exist. OK or NG >> GO TO 3. >> • Repair harness between smart entrance control unit and combination meter. • Repair harness between smart entrance control unit Ω 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

2. CHECK HARNESS FOR SHORT CIRCUIT

Disconnect the following connectors.

Combination meter connector.

LAN-375

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

: Continuity should not exist.

: Continuity should not exist.

OK or NG

1.

2.

OK

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

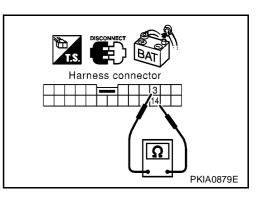
- Disconnect harness connector B107. 1.
- 2. Check continuity between harness connector B101 terminals 3 (L) and 14(R).

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.



А

В

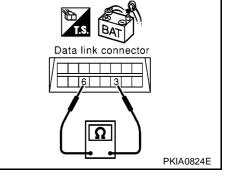
E

F

Н

LAN

Μ



Data link connector 6 3 6,3 Ω PKIA0825E

5. CHECK HARNESS FOR SHORT CIRCUIT

Check continuity between harness connector B101 terminals 3 (L), 14(R) and ground.

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

: 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

- >> 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

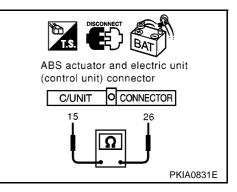
15(R) - ground

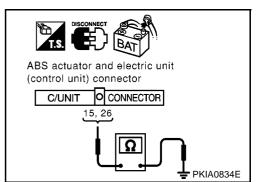
- : Continuity should not exist.
- : Continuity should not exist.

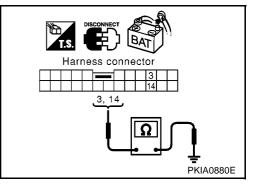
OK or NG

NG

- OK >> GO TO 8.
 - >> 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)

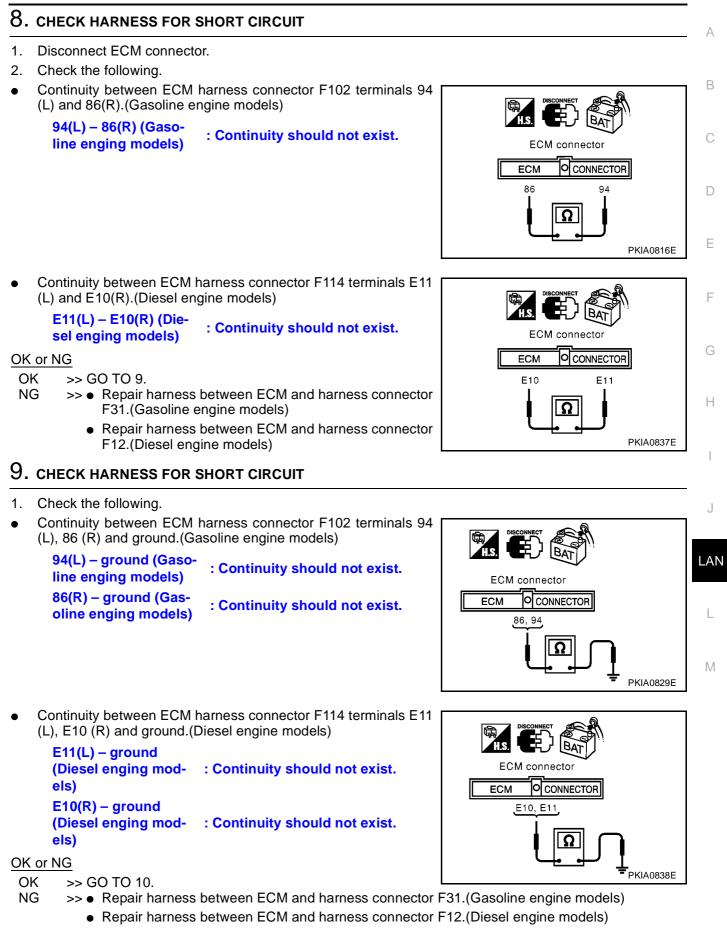






- FOR SHORT CIRCUIT
- HECK HARNESS FOR

[CAN]



LAN-377

EKS0051U

10. ECM / COMBINATION METER INTERNAL CIRCUIT INSPECTION

Check components inspection. Refer to <u>LAN-378</u>, "ECM / COMBINATION METER INTERNAL CIRCUIT INSPECTION"

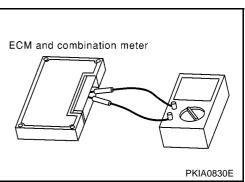
OK or NG

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

Component Inspection 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.

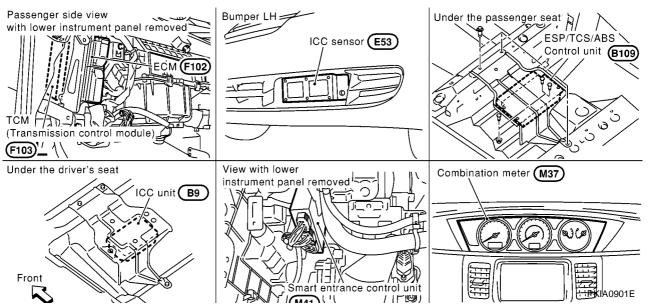
Unit	Terminal	Resistance value (Ω)
ECM (Gasoline engine models)	94 – 86	
ECM (Diesel engine models)	E11 – E10	Approx. 108 - 132
Combination meter	30 – 31	



System Description

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

Component Parts and Harness Connector Location



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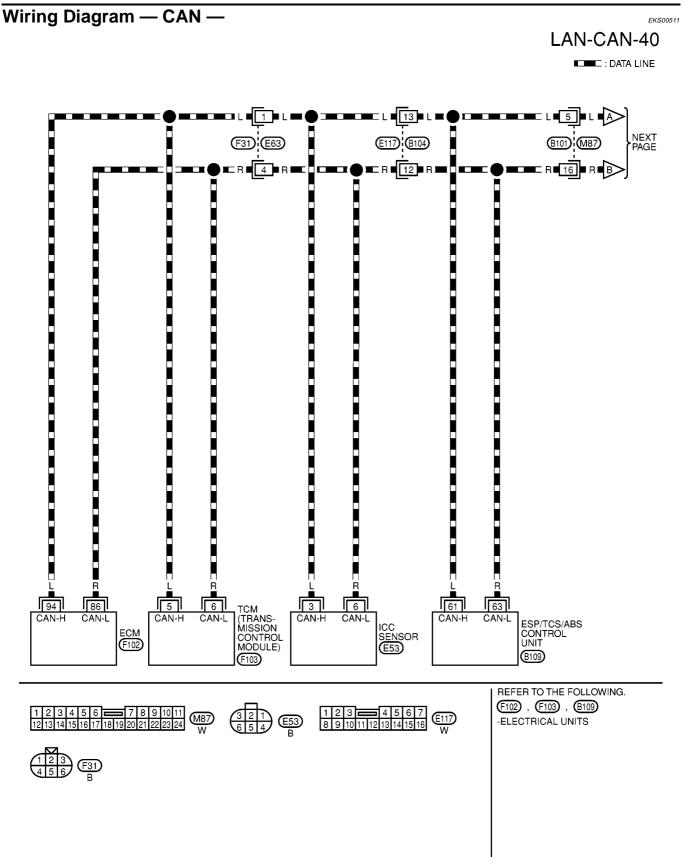
D

EKS00510

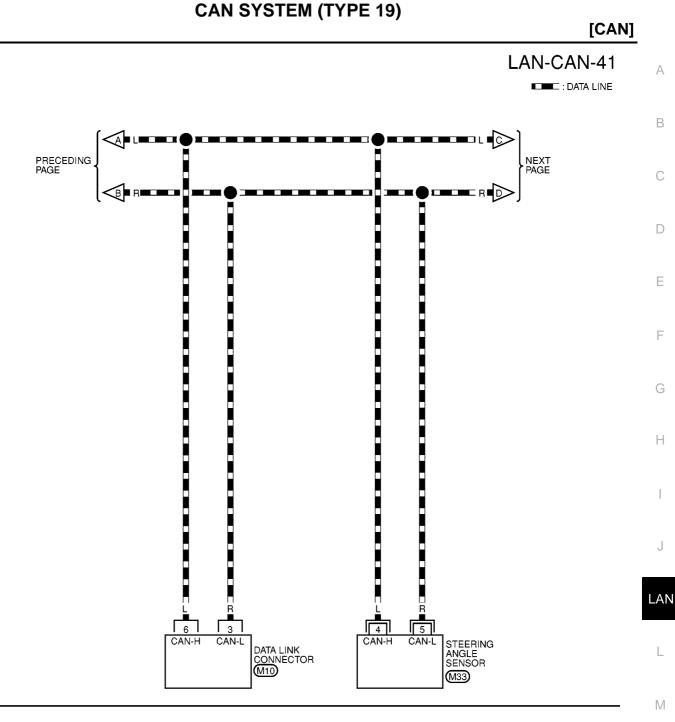
А

В

С



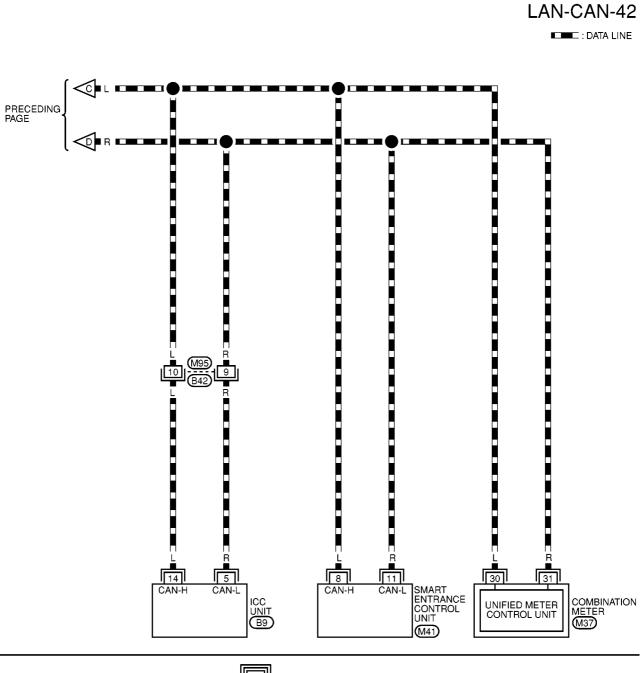
MKWA0377E





MKWA0378E







MKWA0379E

Work Flow

VVC	DIK FIOW 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 <u>EC-1083</u> , " <u>DTC U1000</u> , <u>U1001 CAN</u> <u>COMMUNICATION LINE</u> " (WITH EURO-OBD) or <u>EC-1505</u> , " <u>DTC U1000</u> , <u>U1001 CAN COMMUNICA-</u>	A
	<u>TION LINE</u> " (WITHOUT EURO-OBD) for "ENGINE" and Refer to <u>CVT-118</u> , "DTC U1000 CAN COMMU- <u>NICATION LINE</u> " (EURO-OBD) or <u>CVT-201</u> , "CAN COMMUNICATION LINE" (ALL) for "CVT". Refer to <u>BRC-107</u> , "Inspection 15 CAN Communication Circuit, ESP/TCS/ABS Control Unit and Steering Angle	В
	<u>Sensor</u> for "ABS". Refer to <u>ACS-46, "DTC 20 CAN COMM CIRCUIT</u> for "ICC". Refer to <u>BCS-40, "CAN</u> <u>Communication Line Check</u> " for "SMART ENTRANCE".	С
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"	D
	NOTE: If "NG" is displayed on "CAN COMM" for the diagnosed control unit, replace the control unit.	Е
4.	According to the check sheet results (example), start inspection. Refer to <u>LAN-385</u> , "CHECK SHEET <u>RESULTS (EXAMPLE)</u> "	F
		G
		Н
		I
		J

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CHECK SHEET

ENGINE	CAN COMM	CAN CIRC 1	_	CAN CIRC 2	-	CAN CIRC 3	_	CAN CIRC 5	CAN CIRC 6	CAN CIRC 4	
CVT	CAN	CAN	CAN	<u> </u>	_	CAN	_			CAN	
ABS	COMM CAN	CIRC 1 CAN	CIRC 2 CAN	CAN	_	CIRC 3	CAN	CAN		CIRC 4	
	COMM CAN	CIRC 1 CAN	CIRC 2 CAN	CIRC 3 CAN	CAN	CAN	CIRC 5	CIRC 6			
CC SMART	COMM CAN	CIRC 1 CAN	CIRC 2 CAN	CIRC 4	CIRC 8	CIRC 3	-	-	_	CAN	
ENTRANCE	COMM	CIRC 1	CIRC 2	_	-	_	_	_	_	CIRC 3	
Symptoms:											
s	Attach copy ENGINE ELF-DIAG RE			Attach copy of CVT SELF-DIAG RESULTS				Attach copy of ABS SELF-DIAG RESULTS			
Attach copy of ICC SELF-DIAG RESULTS				SMA	Attach copy of ART ENTRAN F-DIAG RESI	ICE					
Attach copy of ENGINE DATA MONITOR				Attach copy of CVT DATA MONITOR				Attach copy of ABS DATA MONITOR			
	Attach copy ICC DATA MONI			SM	Attach copy of ART ENTRAN ATA MONITC	ICE					

CHECK SHEET RESULTS (EXAMPLE)

	COMM CAN COMM	CIRC 1 CAN		CIRC 2	-	CAN CIRC 3	-	CAN CIRC 5	CAN CIRC 6	CAN CIRC 4
400		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	I	-	_	_
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2	_	-	-	Ι	-	_	CAN CIRC 3
ENGINE	CAN COMM	CAN CIRC 1	_	CAN CINC 2	_	CAN CINC 3	_	CAN CINC 5	CAN CINC 6	CAN CINC 4
СVТ	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

CVT	CAN	CAN CIRC 1	CAN CIRC 2	_	_	CAN CIRC 3	_	—	_	CAN CIRC 4
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CINC 3	_	_	CAN CIRC 5	CAN CIRC 6	_	_
ICC	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CINC 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
сут	CAN COMM	CAN CIRC 1	CAN CINC 2	-	_	CAN CINC 3	-	-	_	CAN CINC 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

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Case 3: Replace ESP/TCS/ABS control unit

ENGINE	CAN COMM	CAN CIRC 1	_	CAN CIRC 2	—	CAN CINC 3	_	CAN CIRC 5	CAN CIRC 6	CAN CIRC 4
CVT	CAN COMM	CAN CIRC 1	CAN CIRC 2	-	-	CAN CINC 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 CNC 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
СVТ	CAN COMM	CAN CIRC 1	CAN CIRC 2	_	_	CAN CIRC 3	_	_	_	CAN CIRC 4
ABS	CAN COMM	CAN CIRC 1	CAN CINC 2	CAN CINC 3	_	_	CAN CINC 5	CAN CINC 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 CINC 5	CAN CIRC 6	CAN CIRC 4
СVТ	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 CINC 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	CAN	_	CAN	_	CAN	_	CAN	CAN	CAN
	COMM	CIRC 1		CIRC 2		CIRC 3		CIRC 5	CIRC 6	CIRC 4
СУТ	CAN	CAN	CAN			CAN				CAN
UVI	COMM	CIRC 1	CIRC 2	_	_	CIRC 3	_	_	_	CIRC 4
400	CAN	CAN	CAN	CAN			CAN	CAN		
ABS	COMM	CIRC 1	CIRC 2	CIRC 3	_	_	CIRC 5	CIRC 6	_	_
ICC	CAN	CAN	CAN	CAN	CAN	CAN				
100	COMM	CIRC 1	CINC 2	CINC 4	CINC 8	CINC 3	_	_	_	_
SMART	CAN	CAN	CAN							CAN
ENTRANCE	COMM	CIRC 1	CIRC 2	-	-	_			-	CIRC 3

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	CAN CIBC 1	-	CAN CIBC 2	_	CAN CIBC 3	_	CAN CIBC 5	CAN	CAN CIRC 4
CAN	CAN	CAN	_	_	CAN	_	_	_	CAN
CAN	CAN	CAN	CAN	_		CAN	CAN	_	CIRC 4
CAN	CAN	CAN	CAN	CAN	CAN				
			CIRC 4		CIRC 3				CAN
ССММ	CIRC 1	CIRC 2	-	_	-	_	-	-	CIRC 3
CAN	CAN	_	CAN	_	CAN	_	CAN	CAN	CAN
CAN	CAN	CAN			CAN				CIRC 4 CAN
COMM CAN	CIRC 1 CAN	CIRC 2 CAN			CIRC 3	CAN		_	CIRC 4
COMM	CIRC 1	CIRC 2	CIRC 3			CIRC 5	CIRC 6	-	-
COMM	CIRC 1	CIRC 2	CIRC 4	CIRC 8	CIRC 3	-	-	_	-
CAN COMM	CAN CIRC 1	CAN CMC 2	-	_	-	-	_	-	CAM CINC 3
	CAN CIBC 1	_	CAN CIBC 2	_	CAN CINC 3	_	CAN CINC 5		CAM CINC 4
CAN COMM	CAN CIRC 1	CAN CIRC 2	<u> </u>	_	CAN CAN CINC 3	_	— —		CAN CINC 4
						CAN	CAN		CINC 4
CAN	CAN	CAN	UAN	_	· -			· -	_
CAN COMM	CIRC 1	CAN CINC 2 CAN	CAN CINC 3 CAN	– CAN	CAN	CIRC 5	CIRC 6	-	-
CAN COMM CAN COMM	CIRC 1 CAN CIRC 1	CAN CINC 2	CINC 3 CAN CINC 4	CAN CIRC 8	CAN CIRC 3			-	_ _
CAN COMM CAN	CIRC 1 CAN	CAN	CINC 3 CAN CINC 4 —	CAN				_ _ _	CAN CIRC 3
CAN COMM CAN COMM CAN	CIRC 1 CAN CIRC 1 CAN	CAN CINC 2	CAN CINC 4	CAN CIRC 8	CIRC 3	CIRC 5	CIRC 6		
CAN COMM CAN COMM CAN	CIRC 1 CAN CIRC 1 CAN	CAN CINC 2	CAN CINC 4	CAN CIRC 8	CIRC 3	CIRC 5	CIRC 6		
CAN COMM CAN COMM CAN COMM	CIRC 1 CAN CIRC 1 CAN CIRC 1	CAN CINC 2	CAN CINC 4 	CAN CIRC 8	CIRC 3 —	CIRC 5	CIRC 6 — —	_	CIRC 3
CAN COMM CAN CAN CAN COMM CAN CAN	CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN	CAN CIVC 2 CAN CIVC 2 	CAN CINC 4 _	CAN CIRC 8		CIRC 5	CIRC 6		CIRC 3
CAN COMM CAN CAN COMM CAN CAN CAN CAN CAN	CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1	CAN CINC 2 CAN CINC 2	CAN CINC 4 	CAN CIRC 8 — — —	CIRC 3 —	CIRC 5 - - - -	CIRC 6 — — — — — — — — — —	CAM CINC 6	CIRC 3
CAN COMM CAN CAN COMM CAN CAN CAN CAN CAN CAN CAN	CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1	CAN CINC 2 CAN CINC 2 	CAN CINC 4 - CAN CIRC 2 - CAN CINC 3	CAN CIRC 8 — — — — — — —	CIRC 3 — CAN CINC 3 CAN CINC 3 —	CIRC 5 - -		_	CIRC 3
CAN COMM CAN CAN COMM CAN CAN COMM CAN CAN CAN COMM CAN COMM	CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1	CAN CIAC 2 CAN CIAC 2 CAN CIAC 2 CAN CIAC 2 CAN CIAC 2 CAN CIAC 2	CAN CINC 4 	CAN CIRC 8 — — —		CIRC 5 — — — — — — — — — — —	CIRC 6 — — — CAN CINC 5 — CAN	CAM CINC 6	CIRC 3 CAM CINC 4 CAN CINC 4 CINC 4
CAN COMM CAN COMM CAN COMM CAN COMM CAN COMM CAN	CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1	CAN CINC 2 CAN CINC 2 	CAN CINC 4 - CAN CIRC 2 - CAN CINC 3	CAN CIRC 8 — — — — — — —	CIRC 3 — CAN CINC 3 CAN CINC 3 — CAN	CIRC 5 — — — — — — — — — — —	CIRC 6 — — — CAN CINC 5 — CAN	CAM CINC 6	CIRC 3 CAM CINC 4 CAN CINC 4 -
CAN COMM CAN CAN COMM CAN COMM CAN COMM CAN COMM CAN CAN	CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN	CAN CIAC 2 CAN CIAC 2 CAN CIAC 2 CAN CIAC 2 CAN CIAC 2 CAN CIAC 2	CAN CINC 4 - CAN CIRC 2 - CAN CINC 3	CAN CIRC 8 — — — — — — —	CIRC 3 — CAN CINC 3 CAN CINC 3 — CAN	CIRC 5 — — — — — — — — — — —	CIRC 6 — — — — — — — — — — — — —		CIRC 3 CAM CINC 4 CAN CINC 4 CAN
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CAN COMM CAN COMM CAN COMM CAN COMM CAN COMM CAN COMM CAN COMM CAN COMM	CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1	CAN CIAC 2 CAN CIAC 2 CAN CIAC 2 CAN CIAC 2 CAN CIAC 2 CAN CIAC 2	CAN CINC 4 CAN CIRC 2 CAR CINC 3 CAR CINC 4 	CAN CIRC 8 — — — — — — —	CIRC 3 	CIRC 5 — — — — — — — — — — —	CIRC 6 	- CAM CINC 6 - - -	CIRC 3 CAM CINC 4 CAN CINC 4 - CAN CIRC 3
CAN COMM CAN COMM CAN COMM CAN COMM CAN COMM CAN COMM CAN COMM CAN COMM CAN COMM	CIRC 1 CAN CIRC 1	CAN CIAC 2 CAN CIAC 2 CAN CIAC 2 CAN CIAC 2 CAN CIAC 2 CAN CIAC 2 CAN CIAC 2 CAN CIAC 2 CAN CIAC 2 CAN CIAC 2	CAN CINC 4 — CAN CIRC 2 — CAR CIRC 2 — CAR CIRC 3 CAR CINC 3 CAR CINC 4 —	CAN CIRC 8 — — — — — — —	CIRC 3 	CIRC 5 — — — — — — — — — — —	CIRC 6 — — — — — — — — — — — — —		CIRC 3 CAM CINC 4 CAM CINC 4 CAN CIRC 3 CAM CINC 4
CAN COMM CAN CAN COMM CAN COMM CAN COMM CAN COMM CAN COMM CAN COMM CAN COMM	CIRC 1 CAN CIRC 1	CAN CINC 2 CAN CINC 2 CAN CIRC 2 CAN CIRC 2 CAN CIRC 2 CAN CIRC 2 CAN CIRC 2	CAN CINC 4 — CAN CIRC 2 — CAN CIRC 2 — CAN CINC 4 — CAN CINC 4 — CAN CIRC 2 —	CAN CIRC 8 — — — — — — —	CIRC 3 	CIRC 5	CIRC 6 — — — — — — — — — — — — —		CIRC 3 CAM CINC 4 CAN CINC 4 - CAN CIRC 3
CAN COMM CAN CAN COMM CAN COMM CAN COMM CAN COMM CAN COMM CAN COMM CAN COMM CAN COMM CAN COMM CAN COMM	CIRC 1 CAN CIRC 1	CAN CINC 2 CAN CINC 2 CAN CIRC 2 CAN CIRC 2 CAN CIRC 2 CAN CIRC 2 CAN CIRC 2 CAN CIRC 2	CAN CINC 4 	CAN CIRC 8 — — — — — — — — — — — — — — — — — — —	CIRC 3 	CIRC 5 — — — — — — — — — — —	CIRC 6 	- CAM CINC 6 - - -	CIRC 3 CAM CINC 4 CAM CINC 4 CAN CIRC 3 CAM CINC 4
CAN COMM CAN CAN COMM CAN COMM CAN COMM CAN COMM CAN COMM CAN COMM CAN COMM CAN COMM CAN COMM	CIRC 1 CAN CIRC 1	CAN CINC 2 CAN CINC 2 CAN CIRC 2 CAN CIRC 2 CAN CIRC 2 CAN CIRC 2 CAN CIRC 2 CAN CIRC 2 CAN CIRC 2	CAN CINC 4 	CAN CIRC 8 — — — — — — —	CIRC 3 	CIRC 5	CIRC 6 — — — — — — — — — — — — —		CIRC 3 CAM CINC 4 CAM CINC 4 CAN CIRC 3 CAM CINC 4
	CAN COMM CAN COMM CAN COMM CAN COMM CAN COMM CAN COMM CAN COMM CAN COMM CAN COMM CAN COMM	CAN CAN COMM CIRC 1 CAN CAN COMM CIRC 1	CAN CAN CIRC 1 CAN CIRC 1 CIRC 2 CAN CAN CAN COMM CIRC 1 CIRC 2	CAN COMMCAN CIRC 1-CAN CIRC 2CAN COMMCAN CIRC 1CAN CIRC 2-CAN COMMCAN CIRC 1CIRC 2-CAN COMMCAN CIRC 1CIRC 2CIRC 3CAN COMMCAN CIRC 1CAN CIRC 2CAN CAN CANCAN CAN CAN CIRC 1CIRC 2CAN COMMCAN CIRC 1CAN CIRC 2CAN CIRC 2-CAN COMMCAN CIRC 1CIRC 2-CAN COMMCAN CIRC 1CIRC 2-CAN COMMCAN CIRC 1CAN CIRC 2CAN CAN CAN CANCAN CAN CAN CAN CANCAN <td>CAN CAN CIRC 1 - CAN - CAN CIRC 1 CIRC 2 - - - CAN CAN CAN CAN CAN - - CAN CAN CAN CAN CAN - - CAN CAN CAN CAN CAN CAN - CAN CAN CAN CAN CAN CAN CAN COMM CIRC 1 CIRC 2 CIRC 3 - - CAN CAN CAN CAN CAN CAN COMM CIRC 1 CIRC 2 CIRC 4 CIRC 8 CAN CAN CAN CAN CAN CAN COMM CIRC 1 CIRC 2 - - - CAN CAN CAN CAN CAN - - CAN CAN CAN CAN CAN - - - CAN CAN CAN CAN CAN CAN CAN CAN CAN CA</td> <td>COMMCIRC 1-CIRC 2-CIRC 3CANCANCANCANCANCOMMCIRC 1CIRC 2CIRC 3CANCANCANCANCANCANCOMMCIRC 1CIRC 2CIRC 3CANCANCANCANCANCANCOMMCIRC 1CIRC 2CIRC 4CIRC 8CIRC 3CANCANCANCANCANCANCOMMCIRC 1CIRC 2CANCANCANCANCANCANCOMMCIRC 1CIRC 2CANCANCANCANCANCANCOMMCIRC 1CIRC 2CIRC 3CANCANCANCANCANCANCOMMCIRC 1CIRC 2CIRC 3-CANCANCANCANCANCANCOMMCIRC 1CIRC 2CIRC 4CIRC 8CIRC 1CIRC 2CIRC 4CIRC 8CIRC 3CANCANCANCANCANCANCOMMCIRC 1CIRC 2CANCANCANCANCANCANCOMMCIRC 1CIRC 2CANCANCANCANCANCANCOMMCIRC 1CIRC 2CANCANCAN<</td> <td>CAN CAN CIRC 1 CIRC 2 CAN CIRC 3 CIRC 3 CAN CAN CAN CAN CAN CAN CAN CIRC 3 - CAN CAN CAN CAN CAN CAN CAN - CIRC 3 - CAN CAN CAN CAN CAN CAN CAN CIRC 3 - CAN CAN CAN CAN CAN CAN CAN CIRC 5 CAN CAN CAN CAN CAN CAN CAN CAN COMM CIRC 1 CIRC 2 CIRC 3 - - CIRC 5 CAN CAN CAN CAN CAN CAN CAN CAN COMM CIRC 1 CIRC 2 - - - - - CAN <t< td=""><td>CAN CAN - CAN - CAN - CAN - CAN - CAN - CAN CIRC 3 - CAN CIRC 5 CAN <</td><td>$\begin{array}{c c c c c c c c c c c c c c c c c c c$</td></t<></td>	CAN CAN CIRC 1 - CAN - CAN CIRC 1 CIRC 2 - - - CAN CAN CAN CAN CAN - - CAN CAN CAN CAN CAN - - CAN CAN CAN CAN CAN CAN - CAN CAN CAN CAN CAN CAN CAN COMM CIRC 1 CIRC 2 CIRC 3 - - CAN CAN CAN CAN CAN CAN COMM CIRC 1 CIRC 2 CIRC 4 CIRC 8 CAN CAN CAN CAN CAN CAN COMM CIRC 1 CIRC 2 - - - CAN CAN CAN CAN CAN - - CAN CAN CAN CAN CAN - - - CAN CAN CAN CAN CAN CAN CAN CAN CAN CA	COMMCIRC 1-CIRC 2-CIRC 3CANCANCANCANCANCOMMCIRC 1CIRC 2CIRC 3CANCANCANCANCANCANCOMMCIRC 1CIRC 2CIRC 3CANCANCANCANCANCANCOMMCIRC 1CIRC 2CIRC 4CIRC 8CIRC 3CANCANCANCANCANCANCOMMCIRC 1CIRC 2CANCANCANCANCANCANCOMMCIRC 1CIRC 2CANCANCANCANCANCANCOMMCIRC 1CIRC 2CIRC 3CANCANCANCANCANCANCOMMCIRC 1CIRC 2CIRC 3-CANCANCANCANCANCANCOMMCIRC 1CIRC 2CIRC 4CIRC 8CIRC 1CIRC 2CIRC 4CIRC 8CIRC 3CANCANCANCANCANCANCOMMCIRC 1CIRC 2CANCANCANCANCANCANCOMMCIRC 1CIRC 2CANCANCANCANCANCANCOMMCIRC 1CIRC 2CANCANCAN<	CAN CAN CIRC 1 CIRC 2 CAN CIRC 3 CIRC 3 CAN CAN CAN CAN CAN CAN CAN CIRC 3 - CAN CAN CAN CAN CAN CAN CAN - CIRC 3 - CAN CAN CAN CAN CAN CAN CAN CIRC 3 - CAN CAN CAN CAN CAN CAN CAN CIRC 5 CAN CAN CAN CAN CAN CAN CAN CAN COMM CIRC 1 CIRC 2 CIRC 3 - - CIRC 5 CAN CAN CAN CAN CAN CAN CAN CAN COMM CIRC 1 CIRC 2 - - - - - CAN CAN <t< td=""><td>CAN CAN - CAN - CAN - CAN - CAN - CAN - CAN CIRC 3 - CAN CIRC 5 CAN <</td><td>$\begin{array}{c c c c c c c c c c c c c c c c c c c$</td></t<>	CAN CAN - CAN - CAN - CAN - CAN - CAN - CAN CIRC 3 - CAN CIRC 5 CAN <	$\begin{array}{c c c c c c c c c c c c c c c c c c c $

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Case 9										
ENGINE	CAN COMM	CAN CIRC 1	-	CAN CIRC 2	-	CAN CIRC 3	-	CAN CINC 5	CAN CINC 6	CAN CINC 4
СVТ	CAN COMM	CAN CIRC 1	CAN CIRC 2	_	_	CAN CIRC 3	-	1	_	CAN CINC 4
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 3	_	-	CAN CIRC 5	CAN CINC 6	_	-
ICC	CAN COMM	CAN CIRC 1	CAN CNC 2	CAN CINC 4	CAN CINC 8	CAN CNC 3	_	_	_	—
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CNC 2	_	_	_	-		_	CAN CIRC 3

Case 10

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ENGINE	CAN COMM	CAN CIRC 1	_	CAN CIRC 2	_	CAN CIRC 3	_	CAN CIRC 5	CAN CINC 6	CAN CINC 4
СЛ	CAN COMM	CAN CIRC 1	CAN CIRC 2	_	_	CAN CIRC 3	_	_	_	CAN CINC 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 CNC 2	-	_	_	_	_	1	CAN CIRC 3

Coco 11

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

Case 12										
ENGINE	CAN	CAN	_	CAN	_	CAN	_	CAN	CAN	CAN

ENGINE	COMM	CIRC 1	_	CINC 2	_	CIRC 3	_	CIRC 5	CIRC 6	CIRC 4
СVТ	CAN COMM	CAN CINC 1	CAN CINC 2	-	-	CAN CINC 3	-	_	-	CAN CINC 4
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CINC 3	-	_	CAN CIRC 5	CAN CIRC 6	-	_
ICC	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CINC 4	CAN CIRC 8	CAN CIRC 3	_	_	_	_
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2	_	_	_	_	_	_	CAN CIRC 3

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CVT ABS ICC SMART	COMM CAN COMM	CIRC 1	_	CAN CIRC 2	-	CAN CIRC 3	-	CAN CIRC 5	CAN CIRC 6	CAN CIRC 4
сс	1 ССМИМ !	CAN CIRC 1	CAN CIRC 2	_	_	CAN CIRC 3	_	-	-	CAN CIRC 4
	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 3	_	_		CAN CIRC 6	_	-
	CAN	CAN	CAN	CAN	CAN	CAN	CIRC 5		_	_
	COMM CAN	CIRC 1 CAN	CIRC 2 CAN	CIRC 4	CI M C 8	CIRC 3	_	_	_	CAN
ENTRANCE		CIRC 1	CIRC 2							CIRC 3
Case 14										
ENGINE	CAN COMM	CAN CIRC 1	-	CAN CIRC 2	-	CAN CINC 3	-	CAN CIRC 5	CAN CIRC 6	CAN CIRC 4
CVT	CAN COMM	CAN CIRC 1	CAN CIRC 2	_	_	CAN CINC 3	_	_	_	CAN CIRC 4
ABS	CAN COMM	CAN CINC 1	CAN CINC 2	CAN CINC 3	_	_	CAN CINC 5	CAN CINC 6	_	_
ICC	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 4	CAN CIRC 8	CAM CINC 3	_	_	_	_
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2	_	-	-	_	_	_	CAN CIRC 3
Case 15		CAN		CAN		CAN		CAN	CAN	CAN
1000		CAN		CAN		CAN		CAN	CAN	CAN
	CAN COMM	CIRC 1	_	CIRC 2	_	CIRC 3	-	CIRC 5	CIRC 6	CIRC 4
ENGINE			– CAN CIRC 2		-		_			
ENGINE CVT	COMM CAN	CIRC 1 CAN	CAN	CIRC 2	_ _ _	CIRC 3 CAN	- CAN CINC 5	CIRC 5		CIRC 4 CAN
ENGINE CVT ABS ICC	COMM CAN COMM CAN COMM CAN	CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN	CAN CIRC 2 CAN CIRC 2 CAN	CIRC 2 — CAN CIRC 3 CAN	CAN	CIRC 3 CAN CIRC 3 — CAN	CAN	CIRC 5 — CAN	CIRC 6 —	CIRC 4 CAN CIRC 4
ENGINE CVT ABS ICC SMART	COMM CAN COMM CAN COMM	CIRC 1 CAN CIRC 1 CAN CIRC 1	CAN CIRC 2 CAN CIRC 2	CIRC 2 — CAN CIRC 3		CIRC 3 CAN CIRC 3 —	CAN	CIRC 5 — CAN CIRC 6	CIRC 6 — —	CIRC 4 CAN CIRC 4 —
ENGINE CVT ABS	COMM CAN COMM CAN COMM CAN COMM	CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1	CAN CIRC 2 CAN CIRC 2 CAN CIRC 2 CAN	CIRC 2 CAN CIRC 3 CAN CIRC 4 -	CAN	CIRC 3 CAN CIRC 3 - CAN CIRC 3 -	CAN	CIRC 5 - CAN CIRC 6 - -	CIRC 6 	CIRC 4 CAN CIRC 4 - CAN CIRC 3
ENGINE CVT ABS ICC SMART ENTRANCE	COMM CAN COMM CAN COMM CAN COMM CAN COMM	CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1	CAN CIRC 2 CAN CIRC 2 CAN CIRC 2 CAN CIRC 2	CIRC 2 — CAN CIRC 3 CAN	CAN	CIRC 3 CAN CIRC 3 CAN CIRC 3 - CAN CIRC 3	CAN	CIRC 5 — CAN CIRC 6 —	CIRC 6 — —	CIRC 4 CAN CIRC 4 - CAN CIRC 3 CAN CIRC 3
ENGINE CVT ABS ICC SMART ENTRANCE Case 16 ENGINE	COMM CAN COMM CAN COMM CAN COMM CAN COMM CAN COMM	CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1	CAN CIRC 2 CAN CIRC 2 CAN CIRC 2 CAN CIRC 2	CIRC 2 - CAN CIRC 3 CAN CIRC 4 - CAN CIRC 2 -	CAN	CIRC 3 CAN CIRC 3 CAN CIRC 3 - CAN CIRC 3 CAN	CAN CINC 5 — — — —	CIRC 5 — CAN CIRC 6 — — — — — — — — — — — — —	CIRC 6 — — — — — — — — — — — —	CIRC 4 CAN CIRC 4 - CAN CIRC 3 CAN CIRC 3
ENGINE CVT ABS ICC SMART ENTRANCE	COMM CAN COMM CAN COMM CAN COMM CAN COMM CAN COMM CAN COMM CAN COMM	CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1	CAN CIRC 2 CAN CIRC 2 CAN CIRC 2 CAN CIRC 2 CAN CIRC 2 CAN CIRC 2	CIRC 2 CAN CIRC 3 CAN CIRC 4 - CAN CIRC 2 - CAN CIRC 2	CAN CIRC 8 — — — — — —	CIRC 3 CAN CIRC 3 CAN CIRC 3 - CAN CIRC 3 CAN CIRC 3 CAN CIRC 3 CAN CIRC 3	CAN	CIRC 5 - CAN CIRC 6 - -	CIRC 6 — — — — — — — — — — — —	CIRC 4 CAN CIRC 4 - CAN CIRC 3 CAN CIRC 3
ENGINE CVT ABS ICC SMART ENTRANCE CVT	COMM CAN COMM CAN COMM CAN COMM CAN CAN CAN COMM CAN	CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN	CAN CIRC 2 CAN CIRC 2 CAN CIRC 2 CAN CIRC 2 CAN CIRC 2 CAN CIRC 2 CAN	CIRC 2 - CAN CIRC 3 CAN CIRC 4 - CAN CIRC 2 - CAN CIRC 2	CAN CIRC 8 — — —	CIRC 3 CAN CIRC 3 CAN CIRC 3 CAN CIRC 3 CAN CIRC 3 CAN CIRC 3	CAN CINC 5 - - - - - - - - - - CAN	CIRC 5 — CAN CIRC 6 — — — — — — — — — — — — —	CIRC 6 	CIRC 4 CAN CIRC 4 - CAN CIRC 3 CAN CIRC 4 CAN CIRC 4 CAN CIRC 4

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Case 17										
ENGINE	CAN COMM	CAN CIRC 1	-	CAN CIRC 2	_	CAN CIRC 3		CAN CIRC 5	CAN CINC 6	CAN CIRC 4
СVТ	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 CINC 1	CAN CINC 2	_	-	_	-	-	_	CAN CINC 3

Case 18

ENGINE	CAN COMM	CAN CIRC 1	-	CAN CIRC 2	_	CAN CIRC 3	-	CAN CIRC 5	CAN CIRC 6	CAN CINC 4
СVТ	CAN COMM	CAN CIRC 1	CAN CIRC 2	_	-	CAN CIRC 3	-	-	-	CAN CINC 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 CINC 3

Case 19

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ENGINE	CAN COMM	CAN CINC 1	—	CAN CNC 2	-	CAN CINC 3	—	CAN CINC 5	CAN CINC 6	CAN CINC 4
СVТ	CAN COMM	CAN CINC 1	CAN CINC 2	-	_	CAN CINC 3	—	_	-	CAN CINC 4
ABS	CAN COMM	CAN CINC 1	CAN CINC 2	CAN CINC 3	_	_	CAN CINC 5	CAN CINC 6	_	_
ICC	CAN COMM	CAN CINC 1	CAN CINC 2	CAN CINC 4	CAN CINC 8	CAN CINC 3	-	_	_	_
SMART ENTRANCE	CAN COMM	CAN CINC 1	CAN CINC 2	_	1	_	_	_	-	CAN CINC 3

NOTE: If "NG" is displayed on "CAN COMM" for the diagnosed control unit, replace the control unit. PKIA0794E

INSPECTION	
Proceed trouble diagnosis according to the check sheet results (example).	А
Case 1:Replace ECM.	
Case 2:Replace TCM.	
Case 3:Replace ESP/TCS/ABS control unit.	В
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"	С
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,	D
"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	Е
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"	F
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"	G
Case 15:Check Steering angle sensor Circuit. Refer to <u>LAN-397</u> , "Steering Angle Sensor Circuit Check" Case 16:Check ICC unit Circuit. Refer to <u>LAN-398</u> , "ICC Unit Circuit Check"	
Case 17:Check Smart entrance control unit Circuit. Refer to LAN-398, "Smart Entrance Control Unit Circuit	
Check"	Н
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	
1. CHECK CONNECTOR	
1. Turn ignition switch OFF.	J
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)	LA
• TCM.	
ICC sensor.	
 Between TCM and ICC sensor. 	L
OK or NG	
OK >> GO TO 2.	Μ
NG >> Repair terminal or connector.	
2. CHECK HARNESS FOR OPEN CIRCUIT	

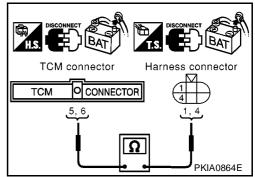
- 1. Disconnect TCM connector and harness connector F31.
- 2. Check continuity between TCM harness connector F103 terminals 5 (L), 6 (R) and harness connector F31 terminals 1 (L), 4 (R).
 - 5(L) 1(L)
 - 6(R) 4(R)

: Continuity should exist. : Continuity should exist.

OK or NG

OK >> GO TO 3.

NG >> Repair harness.

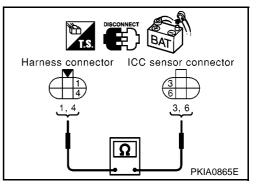


[CAN]

- 1. Disconnect ICC sensor connector.
- 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)
 - 4(R) 6(R)
- : Continuity should exist.
- : 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 <u>EC-1083</u>, "DTC U1000, <u>U1001 CAN COMMUNICATION LINE"</u> (WITH EURO-



OBD) or <u>EC-1505</u>, "DTC U1000, U1001 CAN COMMUNICATION LINE"</u> (WITHOUT EURO-OBD) for "ENGINE" and Refer to <u>CVT-118</u>, "DTC U1000 CAN COMMUNICATION LINE" (EURO-OBD) or <u>CVT-201</u>, "CAN COMMUNICATION LINE" (ALL) for "CVT". Refer to <u>BRC-107</u>, "Inspection 15 <u>CAN Communication Circuit, ESP/TCS/ABS Control Unit and Steering Angle Sensor</u>" for "ABS". Refer to <u>ACS-46</u>, "DTC 20 CAN COMM CIRCUIT" for "ICC". Refer to <u>BCS-40</u>, "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.

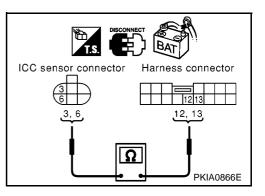
2. CHECK HARNESS FOR OPEN CIRCUIT

- 1. Disconnect ICC sensor connector and harness connector E117.
- 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)
 - 6(R) 12(R)

: Continuity should exist. : 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).

cation Line Check" for "SMART ENTRANCE".

- 13(L) 61(L)12(R) - 63(R)
- : Continuity should exist.

: Continuity should exist.

OK or NG

NG

OK >> Reconnect all connectors to perform "SELF-DIAG and "DATA MONITOR" for "ENGINE", RESULTS" Ω "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 <u>CVT-201, "CAN COMMUNICATION LINE"</u> (ALL) for "CVT". Refer to <u>BRC-107, "Inspection 15</u> 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 Communi-

Circuit Check Between ESP/TCS/ABS Control Unit and Steering Angle Sensor

- 1. CHECK CONNECTOR 1. Turn ignition switch OFF. Disconnect the negative battery terminal. 2. 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.

>> Repair harness.

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.
- Check continuity between ESP/TCS/ABS control unit harness 2. connector B109 terminals 61 (L), 63 (R) and harness connector B101 terminals 5 (L), 16 (R).
 - 61(L) 5(L)
 - 63(R) 16(R)
- : Continuity should exist. : Continuity should exist.

OK or NG

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

Harness connector ESP/TCS/ABS control unit 16 connector 5, 16 C/UNIT O CONNECTOR 61, 63 Ω PKIA0867E В

F

Н

EKS00515

FSP/TCS/ABS Harness connector control unit connector O CONNECTOR C/UNIT 13 12 12, 13 61, 63 PKIA0868E E

- LAN
- Μ

3. CHECK HARNESS FOR OPEN CIRCUIT

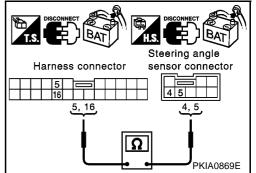
- 1. Disconnect steering angle sensor connector.
- Check continuity between harness connector M87 terminals 5 (L), 16 (R) and steering angle sensor harness connector M33 terminals 4 (L), 5 (R).
 - 5(L) 4(L) 16(R) - 5(R)

: Continuity should exist.

: 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 <u>EC-1083</u>, "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 <u>CVT-118</u>, "DTC U1000 CAN COMMUNICATION LINE" (EURO-OBD) or <u>CVT-201</u>, "CAN COMMUNICATION LINE" (ALL) for "CVT". Refer to <u>BRC-107</u>, "Inspection 15 <u>CAN Communication Circuit, ESP/TCS/ABS Control Unit and Steering Angle Sensor"</u> for "ABS". Refer to <u>ACS-46</u>, "DTC 20 CAN COMM CIRCUIT" for "ICC". Refer to <u>BCS-40</u>, "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.

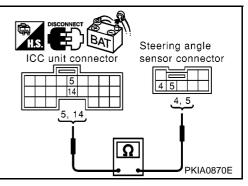
2. CHECK HARNESS FOR OPEN CIRCUIT

- 1. Disconnect ICC unit connector and steering angle sensor connector.
- 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)5(R) - 5(R)

: Continuity should exist. : 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 <u>EC-1083</u>, "<u>DTC U1000</u>, 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".

LAN-394

[CAN	1
Refer to ACS-46, "DTC 20 CAN COMM CIRCUIT" for "ICC". Refer to BCS-40, "CAN Communi	-
cation Line Check ["] for "SMART ENTRANCE".	А
NG >> Repair harness.	
Circuit Check Between ICC Unit and Smart Entrance Control Unit	
1. CHECK CONNECTOR	В
1. Turn ignition switch OFF.	-
2. Disconnect the negative battery terminal.	С
3. Check following terminals and connector for damage, bend and loose connection. (control unit-side and harness-side)	d
ICC unit.	D
Smart entrance control unit.	
Between ICC unit and smart entrance control unit.	Е
OK or NG	
OK >> GO TO 2. NG >> Repair terminal or connector.	
	F
2. CHECK HARNESS FOR OPEN CIRCUIT	
1. Disconnect ICC unit connector and smart entrance control unit connector.	G
2. Check continuity between smart entrance control unit harness	0
connector M41 terminals 8 (L), 11 (R) and ICC unit harness connector B9 terminals 14 (L), 5 (R).	Н
8(L) – 14(L) : Continuity should exist. Smart entrance control ICC unit connector unit connector	
11(R) – 5(R) : Continuity should exist.	
OK >> Reconnect all connectors to perform "SELF-DIAG	
RESULTS" and "DATA MONITOR" for "ENGINE", "CVT" "ABS" "ICC" and "SMART ENTRANCE" dis-	J
"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) LAN
for "ÉNGINE" and Refer to <u>CVT-118, "DTC U1000 CAN COMMUNICATION LINE"</u> (EURO-OBD or <u>CVT-201, "CAN COMMUNICATION LINE"</u> (ALL) for "CVT". Refer to <u>BRC-107, "Inspection 1</u>) <u> </u>
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 Communi cation Line Check" for "SMART ENTRANCE".	
NG >> Repair harness.	
ECM Circuit Chack	\mathbb{M}
1. CHECK CONNECTOR	18
I. 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.

$\overline{2}$. CHECK HARNESS FOR OPEN CIRCUIT

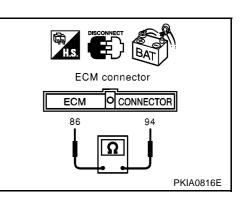
- 1. Disconnect ECM connector.
- Check resistance between ECM harness connector F102 terminals 94(L) and 86(R).

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.

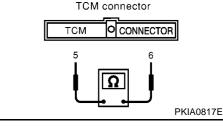
2. CHECK HARNESS FOR OPEN CIRCUIT

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

: Approx. 54 – 66 Ω

OK or NG

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



EKS0051A

ICC Sensor Circuit Check

1. CHECK CONNECTOR

- 1. Turn ignition switch OFF.
- 2. Disconnect the negative battery terminal.
- 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.

LAN-396

$\overline{2}$. CHECK HARNESS FOR OPEN CIRCUIT

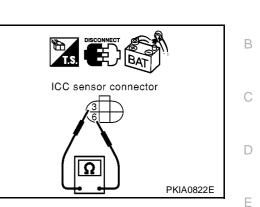
- 1. Disconnect ICC sensor connector.
- 2. Check resistance between ICC sensor harness connector E53 terminals 3(L) and 6(R).

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

C/UNIT

61

control unit connector

Ω

O CONNECTOR

63

PKIA0818E

EKS0051C

[CAN]

EKS0051B

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LAN

Μ

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ESP/TCS/ABS Control Unit Circuit Check

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 term

G >> 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.



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. (sensorside and harness-side)

OK or NG

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

$\overline{2}$. CHECK HARNESS FOR OPEN CIRCUIT

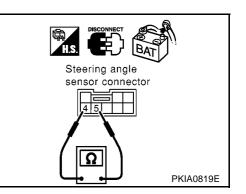
- 1. Disconnect steering angle sensor connector.
- 2. Check resistance between steering angle sensor harness connector M33 terminals 4(L) and 5(R).

4(L) – 5(R)

: **Approx. 54 – 66**Ω

OK or NG

- OK >> Replace steering angle sensor.
- NG >> Repair harness between Data link connector and steering angle sensor.



ICC Unit Circuit Check

1. CHECK CONNECTOR

EKS0051D

- 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.

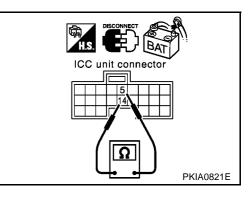
2. CHECK HARNESS FOR OPEN CIRCUIT

- 1. Disconnect ICC unit connector.
- 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.



EKS0051E

Smart Entrance Control Unit Circuit Check

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.

CAN SYSTEM (TYPE 19)

: Approx. 54 – 66 Ω

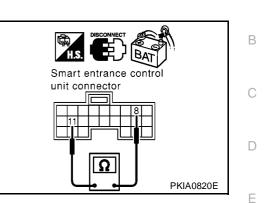
2. CHECK HARNESS FOR OPEN CIRCUIT

- 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)

OK or NG OK >> Replace smart entrance control unit.

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



Combination Meter Circuit Check

1. CHECK CONNECTOR

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

OK or NG

OK >> GO TO 2. NG >> Repair terr

G >> Repair terminal or connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

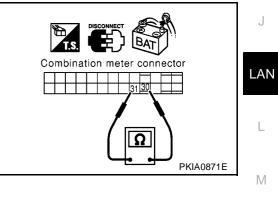
- 1. Disconnect combination meter connector.
- 2. Check resistance between combination meter harness connector M37 terminals 30(L) and 31(R).

30(L) - 31(R)

: Approx. 108 – 132 Ω

OK or NG

- OK >> Replace combination meter.
- NG >> Repair harness between smart entrance control unit and combination meter.



[CAN]

EKS0051F

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CAN Communication Circuit Check

1. CHECK CONNECTOR

- 1. Turn ignition switch OFF.
- 2. Disconnect the negative battery terminal.
- 3. Check following terminals and connector for damage, 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.
- Check continuity between Data link connector M10 terminals 6 (L) and 3(R).

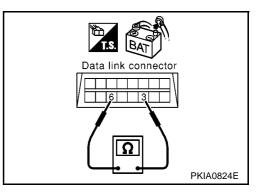
6(L) - 3(R)

: Continuity should not exist.

OK or NG

OK >> GO TO 3. NG >> • Repair

- > 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.



EKS0051G

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

- 6(L) ground
- 3(R) ground

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.

: Continuity should not exist.

: Continuity should not exist.

• Repair harness between Data link connector and harness connector M87.

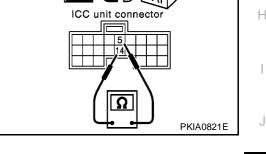
4. CHECK HARNESS FOR SHORT CIRCUIT

- Disconnect ICC unit connector. 1.
- Check continuity between ICC unit harness connector B9 termi-2. nals 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.



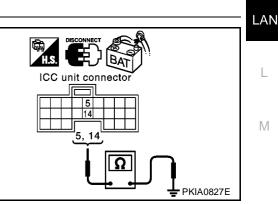
5. CHECK HARNESS FOR SHORT CIRCUIT

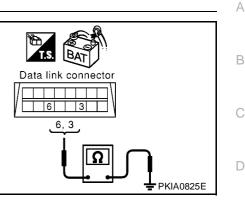
Check continuity between ICC unit harness connector B9 terminals 14 (L), 5 (R) and ground.

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

OK or NG

- OK >> GO TO 6.
- NG >> Repair harness between ICC unit and harness connector B42.





E

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- Н

- Disconnect ESP/TCS/ABS control unit connector and harness connector B104. 1.
- 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

- Disconnect ICC sensor connector and harness connector E63. 1.
- 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. >> • Repair harness between ICC sensor and harness NG connector E117.
 - Repair harness between harness connector E117 and harness connector E63.

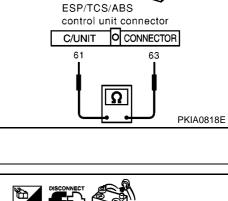
9. CHECK HARNESS FOR SHORT CIRCUIT

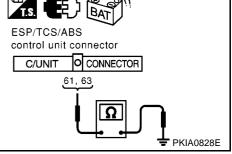
Check continuity between ICC sensor harness connector E53 terminals 3 (L), 6 (R) and ground.

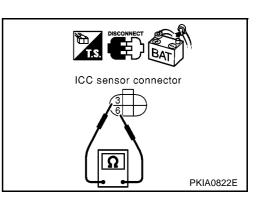
- 3(L) ground 6(R) – ground
- : Continuity should not exist.
- : Continuity should not exist.

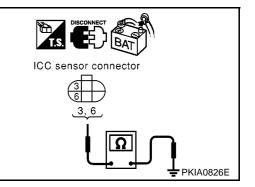
OK or NG

- OK >> GO TO 10.
- >> Repair harness between ICC sensor and harness NG connector E117.
 - Repair harness between harness connector E117 and harness connector E63.









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

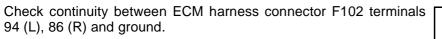
: Continuity should not exist.

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



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

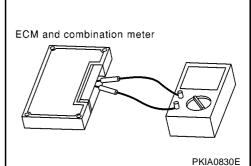
OK or NG

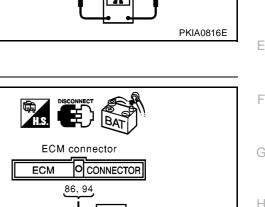
- LAN >> Reconnect all connectors to perform "SELF-DIAG RESULTS" and "DATA MONITOR" for "ENGINE", "CVT", "ABS", "ICC", and "SMART ENTRANCE" displayed on CONSULT-II. Refer to OK EC-1083, "DTC U1000, U1001 CAN COMMUNICATION LINE" (WITH EURO-OBD) or EC-1505, "DTC U1000, U1001 CAN COMMUNICATION LINE" (WITHOUT EURO-OBD) for "ENGINE" and Refer to CVT-118, "DTC U1000 CAN COMMUNICATION LINE" (EURO-OBD) or CVT-201, "CAN <u>COMMUNICATION LINE</u>" (ALL) for "CVT". Refer to <u>BRC-107</u>, "Inspection 15 CAN Communica-tion Circuit, <u>ESP/TCS/ABS</u> Control Unit and Steering Angle Sensor" for "ABS". Refer to <u>ACS-46</u>, "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 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	Applox. 100 - 132





E)

ECM connector

ECM

86

CONNECTOR

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PKIA0829E

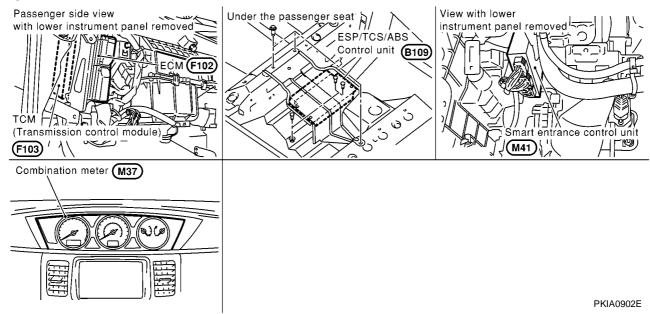
Μ

EKS0051H

System Description

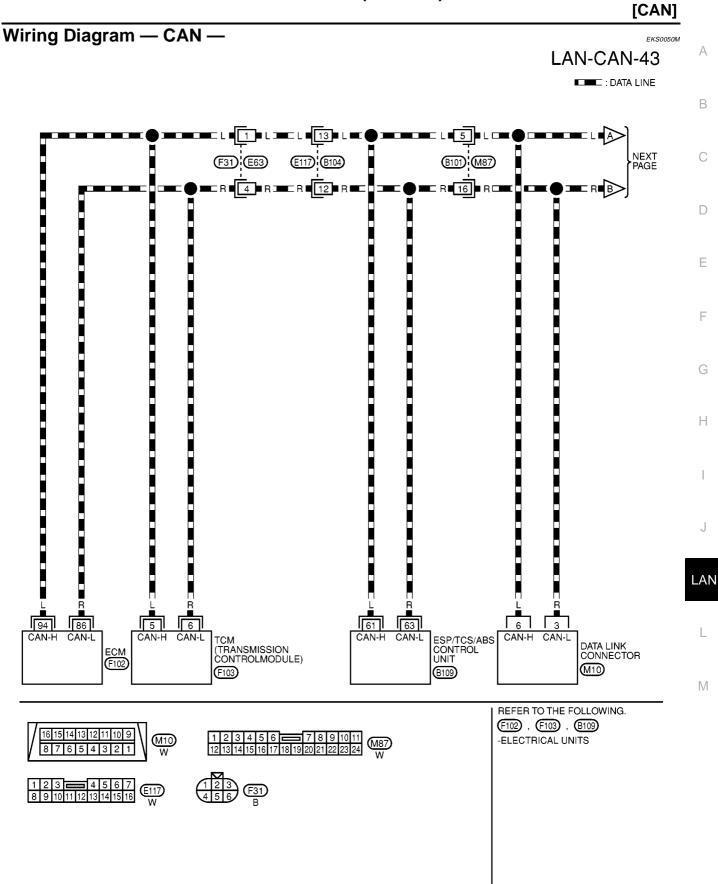
CAN (Controller Area Network) is a serial communication line for real time application. It is an on-vehicle multiplex communication line with high data communication speed and excellent error detection ability. Many electronic control units are equipped onto a vehicle, and each control unit shares information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

Component Parts and Harness Connector Location



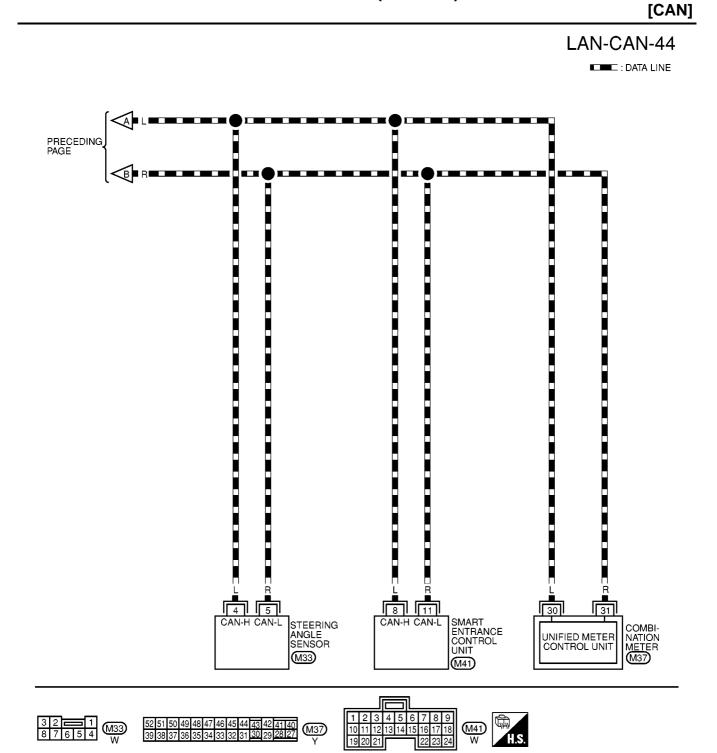
EKS0050K

EKS0050L



MKWA0380E

CAN SYSTEM (TYPE 20)



VV		
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 <u>EC-1083, "DTC U1000, U1001 CAN COMMU-</u>	A
	<u>NICATION LINE</u> " (WITH EURO-OBD) or <u>EC-1505</u> , "DTC U1000, U1001 CAN COMMUNICATION LINE" (WITHOUT EURO-OBD) for "ENGINE" and Refer to <u>CVT-118</u> , "DTC U1000 CAN COMMUNICATION LINE" (EURO-OBD) or <u>CVT-201</u> , "CAN COMMUNICATION LINE" (ALL) for "CVT". Refer to <u>BRC-107</u> ,	В
	"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".	0
2.	Attach the printed sheet of "SELF-DIAG RESULTS" and "DATA MONITOR" onto the check sheet. Refer to LAN-408, "CHECK SHEET"	С
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"	D
	NOTE: If "NG" is displayed on "CAN COMM" for the diagnosed control unit, replace the control unit.	Е
4.	According to the check sheet results (example), start inspection. Refer to <u>LAN-409</u> , "CHECK SHEET <u>RESULTS (EXAMPLE)</u> "	
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CHECK SHEET

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
ymptoms:								
Attach cc ENGII SELF-DIAG	NE	(n copy of CVT AG RESULTS	SE	Attach copy of ABS LF-DIAG RESU	LTS	Attach c SMART EN SELF-DIAG	ITRANCE
Attach cc ENGII DATA MC	NE		n copy of CVT MONITOR		Attach copy of ABS DATA MONITO		Attach c SMART EN DATA MC	TRANCE

CHECK SHEET RESULTS (EXAMPLE)

Case 1: Replace ECM										
ENGINE	CANCOMM	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	1	CAN CIRC 5	-	—		
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2	1	-	_	-	CAN CIRC 3		
ENGINE	CAN COMM	CAN CIRC 1	-	CAN ORC 2	CAN CRC 3	-	CANORC 6	CANORC 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		

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Case 2: Replace TCM

Jase 2. Replace TOW	n							
ENGINE	CAN COMM	CAN CIRC 1	—	CANORC 2	CAN CIRC 3	-	CAN CIRC 6	CAN CIRC 4
CVT	CANCOMM	CAN CIRC 1	CAN CIRC 2	-	CAN CIRC 3	-	-	CAN CIRC 4
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	CANORC 3	-	CAN CIRC 5	-	-
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2	_	_	_	_	CAN CIRC 3
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ENGINE	CAN COMM	CAN CIRC 1	_	CAN CIRC 2	CAN CIRC 3	-	CAN CIRC 6	CAN CIRC 4
CVT	CAN COMM	CAN CIRC 1	CANORC 2	_	CANORC 3	_	-	CANORC 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

	1000 and contain	oranic								
ENGINE	CAN COMM	CAN CIRC 1	-	CAN CIRC 2	CAN CRC 3	-	CAN CIRC 6	CAN CIRC 4		
CVT	CAN COMM	CAN CIRC 1	CAN CIRC 2	-	CAN CRC 3	-	-	CAN CIRC 4		
ABS	CANCOMM	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	CANORC 2	CANORC 3	—	CANORC 5	—	—		
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2	_	-	_	_	CAN CIRC 3		

Case 4: Replace Smart entrance control unit

dase 4. Replace Small 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	CANCOMM	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	CANOR 2	_	_	_	_	CAN CAN	

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Case 5								
ENGINE	CAN COMM	CAN CIRC 1	—	CAN CIRC 2	CANORC 3	—	CANORC 6	CANORC 4
CVT	CAN COMM	CAN CIRC 1	CAN CIRC 2	-	CANORC 3	—	—	CANORC 4
ABS	CAN COMM	CAN CIRC 1	CANORC 2	CAN CIRC 3	_	CAN CIRC 5	-	_
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CANORC 2	_	_	-	-	CAN CIRC 3

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CVT CAN COMM CAN CIRC 1 CAN CIRC 2 — CAN CIRC 3 — — CAN CIR ABS CAN COMM CAN CIRC 1 CAN CIRC 2 CAN CIRC 3 — CAN CIRC 5 — — — — — — CAN CIRC 5 — …			CAN CIBC 1	_	CAN CIBC 2	CAN CIRC 3	_		
ABS CAN COMM CAN CIRC 1 CAN CIRC 2 CAN CIRC 3 — CAN CAN CIRC 5 — …							_		
SMART ENTRANCE CAN COMM CAN CIRC 1 CAN CIRC 2 - - - CAN CIR CAN CIRC 2 Ise 12					CAN CIPC 2			_	
ISE 12 ENGINE CAN COMM CAN CIRC 1 — CAN CIRC 2 CAN CIRC 3 — CAN CIRC 6 CAN CIR CVT CAN COMM CAN CIRC 1 CAN CIRC 2 — CAN CIRC 3 — CAN CIRC 6 CAN CIR ABS CAN COMM CAN CIRC 1 CAN CIRC 2 CAN CIRC 3 — CAN CIRC 5 — — SMART CAN COMM CAN CIRC 1 CAN CIRC 2 — — — CAN CIRC 5 — — — CAN CIRC 5 — — — — CAN CIRC 5 — — — — — CAN CIRC 5 — — — — — — — — — — — — — — — — — —	SMART						-		CAN CIRC
CVT CAN COMM CAN CIRC 1 CAN CIRC 2 CAN CIRC 3 - - ABS CAN COMM CAN CIRC 1 CAN CIRC 2 CAN CIRC 3 - CAN CIRC 5 - SMART CAN COMM CAN CIRC 1 CAN CIRC 2 - - - -	ase 11 ENGINE CVT ABS SMART ENTRANCE	CAN COMM CAN COMM	CAN CIRC 1 CAN CIRC 1	CAN CIRC 2 CAN CIRC 2	– CAN CIRC 3	CAN CIRC 3 —	− CANVARC5 −	-	
CVT CAN COMM CAN CIRC 1 CAN CIRC 2 CAN CIRC 3 - - CAN CIR ABS CAN COMM CAN CIRC 1 CAN CIRC 2 CAN CIRC 3 - CAN CIRC 5 - - SMART CAN COMM CANECTRC 1 CANECTRC 2 - - - CANECTRC 5 - -									
ABS CAN COMM CAN CIRC 1 CAN CIRC 2 CAN CIRC 3 - CAN CIRC 5					CAN CIRC 2			CANOTRC 6	CAN CIRC
					-	CAN CIRC 3			CAN CIRC
		CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 3	_	CAN CIRC 5	_	—
ENTRAINCE	SMART ENTRANCE	CAN COMM	CANOR 1	CANORC 2	_	_	_	_	CAN

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[CAN]

Case 13

Case 13								
ENGINE	CAN COMM	CAN CIRC 1	_	CAN CIRC 2	CAN CIRC 3	_	CAN CIRC 6	CANORC 4
CVT	CAN COMM	CAN CIRC 1	CAN CIRC 2	-	CAN CIRC 3	-	_	CANORC 4
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	CAN CIRC 3	1	CAN CIRC 5	1	—
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2	-	-	-	-	CANARC 3

Case 14

ENGINE	CAN COMM	CAN CIRC 1	_	CANORC 2	CANORC 3	_	CANORC 6	CANORC 4
CVT	CAN COMM	CANCIRC 1	CANOIRC 2		CANORC 3	-	-	CANORC 4
ABS	CAN COMM	CAN CIRC 1	CANORC 2	CANORC 3	-	CANORC 5	—	—
SMART ENTRANCE	CAN COMM	CANAR RC 1	CANOR 2	-	_	_	_	CANORC 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 Smart entrance control unit.

Case 5:Check Harness between TCM and ESP/TCS/ABS control unit. Refer to <u>LAN-411, "Circuit Check</u> <u>Between TCM and ESP/TCS/ABS Control Unit"</u>

Case 6:Check Harness between ESP/TCS/ABS control unit and Steering angle sensor. Refer to <u>LAN-413</u>, <u>"Circuit Check Between ESP/TCS/ABS Control Unit and Steering Angle Sensor"</u>

Case 7:Check Harness between Steering angle sensor and Smart entrance control unit. Refer to <u>LAN-414</u>, "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 <u>LAN-415, "ESP/TCS/ABS Control Unit Circuit</u> LAN <u>Check"</u>

Case 11:Check Steering angle sensor Circuit. Refer to <u>LAN-416</u>, "Steering Angle Sensor Circuit Check" Case 12:Check Smart entrance control unit Circuit. Refer to <u>LAN-416</u>, "Smart Entrance Control Unit Circuit <u>Check</u>"

Case 13:Check Combination meter Circuit. Refer to <u>LAN-417</u>, "Combination Meter Circuit Check" Case 14:Check CAN communication Circuit. Refer to <u>LAN-418</u>, "CAN Communication Circuit Check"

Circuit Check Between TCM and ESP/TCS/ABS Control Unit

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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.

LAN-411

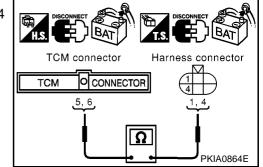
2. CHECK HARNESS FOR OPEN CIRCUIT

- 1. Disconnect TCM connector and harness connector F31.
- 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)
 - 6(R) 4(R)
- : Continuity should exist.
- : Continuity should exist.

OK or NG

OK >> GO TO 3.

NG >> Repair harness.



3. CHECK HARNESS FOR OPEN CIRCUIT

- 1. Disconnect harness connector E117.
- Check continuity between harness connector E63 terminals 1 (L), 4 (R) and harness connector E117 terminals 13 (L), 12 (R).
 - 1(L) 13(L)
 - 4(R) 12(R)
- : Continuity should exist.

: Continuity should exist.

OK or NG

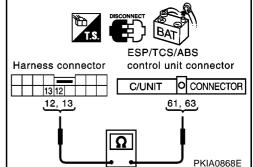
OK	>> GO TO 4.
NG	>> Repair harness.

4. CHECK HARNESS FOR OPEN CIRCUIT

- 1. Disconnect ESP/TCS/ABS control unit connector.
- 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) 12(R) - 63(R)
- : Continuity should exist. : 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 <u>EC-1083, "DTC U1000, U1001</u> <u>CAN COMMUNICATION LINE"</u> (WITH EURO-OBD) or



<u>EC-1505, "DTC U1000, U1001 CAN COMMUNICATION LINE"</u> (WITHOUT EURO-OBD) for "ENGINE" and Refer to <u>CVT-118, "DTC U1000 CAN COMMUNICATION LINE"</u> (EURO-OBD) or <u>CVT-201, "CAN COMMUNICATION LINE"</u> (ALL) for "CVT". Refer to <u>BRC-107, "Inspection 15</u> <u>CAN Communication Circuit, ESP/TCS/ABS Control Unit and Steering Angle Sensor"</u> for "ABS". Refer to <u>BCS-40, "CAN Communication Line Check"</u> for "SMART ENTRANCE".

NG >> Repair harness.

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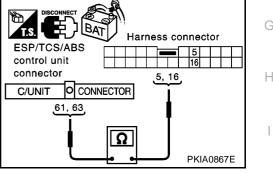
Circuit Check Between ESP/TCS/ABS Control Unit and Steering Angle Sensor

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 Disconnect ESP/TCS/ABS control unit connector and harness connector B101. 1. Check continuity between ESP/TCS/ABS control unit harness 2. connector B109 terminals 61 (L), 63 (R) and harness connector B101 terminals 5 (L), 16 (R). Harness connector ESP/TCS/ABS 61(L) - 5(L): Continuity should exist. control unit 16 : Continuity should exist.

- 63(R) 16(R)

OK or NG

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



3. CHECK HARNESS FOR OPEN CIRCUIT

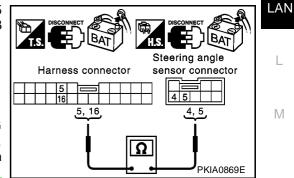
- Disconnect steering angle sensor connector. 1.
- 2. Check continuity between harness connector M87 terminals 5 (L), 16 (R) and steering angle sensor harness connector M33 terminals 4 (L), 5 (R).
 - 5(L) 4(L)16(R) - 5(R)

: Continuity should exist.

: 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 <u>CVT-201, "CAN COMMUNICATION LINE"</u> (ALL) for "CVT". Refer to <u>BRC-107</u>, "Inspection 15 <u>CAN Communication Circuit, ESP/TCS/ABS Control Unit and Steering Angle Sensor"</u> 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

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

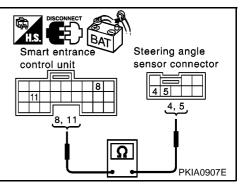
- 1. Disconnect smart entrance control unit connector and steering angle sensor connector.
- 2. Check continuity between smart entrance control unit harness connector M41 terminals 8 (L), 11 (R) and steering angle sensor harness connector M33 terminals 4 (L), 5 (R).
 - 8(L) 4(L) 11(R) - 5(R)

: Continuity should exist.

: 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 <u>EC-1083</u>, "<u>DTC U1000</u>, <u>U1001</u> <u>CAN COMMUNICATION LINE</u>" (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 <u>BRC-107</u>, "Inspection 15 CAN Communication Circuit, ESP/TCS/ABS Control Unit and Steering Angle Sensor" for "ABS". Refer to <u>BCS-40</u>, "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.



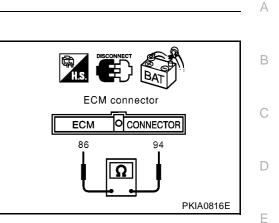
- 1. Disconnect ECM connector.
- 2. Check resistance between ECM harness connector F102 terminals 94(L) and 86(R).

94(L) - 86(R)

: Approx. 108 – 132Ω

OK or NG

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



TCM Circuit Check

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 terr

NG >> Repair terminal or connector.

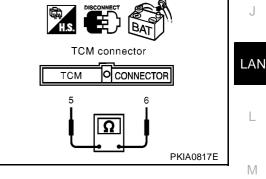
2. CHECK HARNESS FOR OPEN CIRCUIT

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

: Approx. 54 – 66 Ω

OK or NG

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



EKS0050T

ESP/TCS/ABS Control Unit Circuit Check

1. CHECK CONNECTOR

- 1. Turn ignition switch OFF.
- 2. Disconnect the negative battery terminal.
- 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.

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$\overline{2}$. CHECK HARNESS FOR OPEN CIRCUIT

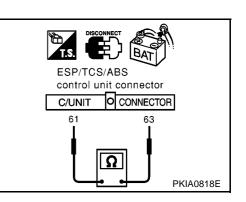
- 1. Disconnect ESP/TCS/ABS control unit connector.
- 2. Check resistance between ESP/TCS/ABS control unit harness connector B109 terminals 61(L) and 63(R).

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

1. CHECK CONNECTOR

EKS0050U

- 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. (sensorside and harness-side)

OK or NG

OK >> GO TO 2.

NG >> Repair terminal or connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

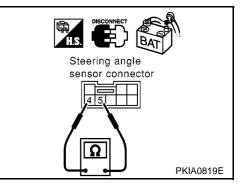
- 1. Disconnect steering angle sensor connector.
- Check resistance between steering angle sensor harness connector M33 terminals 4(L) and 5(R).

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.



EKS0050V

Smart Entrance Control Unit Circuit Check

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.

$\overline{2}$. CHECK HARNESS FOR OPEN CIRCUIT

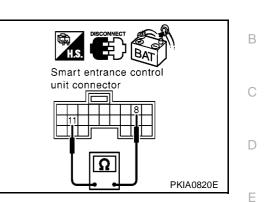
- 1. Disconnect smart entrance control unit connector.
- 2. Check resistance between smart entrance control unit harness connector M41 terminals 8(L) and 11(R).

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

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 ter

G >> Repair terminal or connector.

2. CHECK HARNESS FOR OPEN CIRCUIT

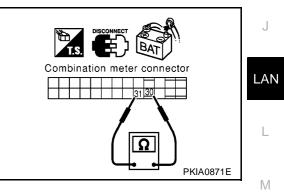
- 1. Disconnect combination meter connector.
- 2. Check resistance between combination meter harness connector M37 terminals 30(L) and 31(R).

30(L) - 31(R)

: Approx. 108 – 132 Ω

OK or NG

- OK >> Replace combination meter.
- NG >> Repair harness between smart entrance control unit and combination meter.



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CAN Communication Circuit Check

1. CHECK CONNECTOR

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

- Disconnect the following connectors. 1.
- Combination meter connector.
- Smart entrance control unit connector.
- Steering angle sensor connector. _
- Harness connector M87.
- Check continuity between Data link connector M10 terminals 6 2. (L) and 3(R).

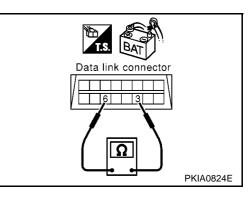
: Continuity should not exist.

OK or NG

OK >> GO TO 3.

6(L) - 3(R)

- >> Repair harness between smart entrance control unit NG 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.



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[CAN]

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

- 6(L) ground
- 3(R) ground

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.

: Continuity should not exist.

: Continuity should not exist.

• 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).

: Continuity should not exist.

OK or NG

OK >> GO TO 5.

61(L) - 63(R)

- NG >> Repair harness between ESP/TCS/ABS control unit and harness connector B101.
 - Repair harness between harness connector B104 and harness connector B101.

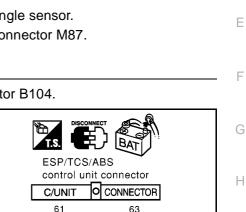
5. CHECK HARNESS FOR SHORT CIRCUIT

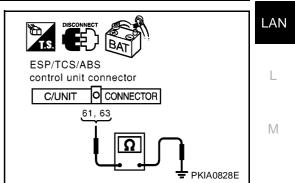
Check continuity between ESP/TCS/ABS control unit harness connector B109 terminals 61 (L), 63 (R) and ground.

- 61(L) ground
- : Continuity should not exist. : Continuity should not exist.
- 63(R) ground OK or NG

NG

- OK >> GO TO 6.
 - >> Repair harness between ESP/TCS/ABS control unit and harness connector B101.
 - Repair harness between harness connector B104 and harness connector B101.

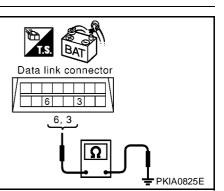




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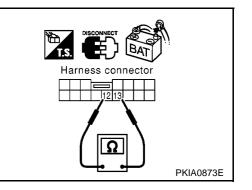
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- 1. Disconnect harness connector E63.
- Check continuity between harness connector E117 terminals 13 (L) and 12(R).
 - 13(L) 12(R)

: 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.
- 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

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: Continuity should not exist.

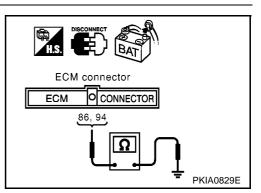
86(R) – ground

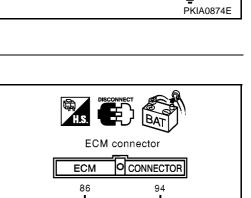
: Continuity should not exist.

OK or NG

OK >> GO TO 10.

- NG >> Repair harness between ECM and harness connector F31.
 - Repair harness between TCM and harness connector F31.





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10. ECM / COMBINATION METER INTERNAL CIRCUIT INSPECTION

Check components inspection. Refer to <u>LAN-421</u>, "ECM / COMBINATION METER INTERNAL CIRCUIT <u>INSPECTION"</u>

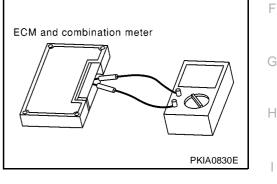
OK or NG

- 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 <u>EC-1083</u>, "DTC U1000, U1001 CAN COMMUNICATION LINE" (WITH EURO-OBD) or <u>EC-1505</u>, C "DTC U1000, U1001 CAN COMMUNICATION LINE" (WITHOUT EURO-OBD) for "ENGINE" and Refer to <u>CVT-118</u>, "DTC U1000 CAN COMMUNICATION LINE" (EURO-OBD) or <u>CVT-201</u>, "CAN <u>COMMUNICATION LINE"</u> (ALL) for "CVT". Refer to <u>BRC-107</u>, "Inspection 15 CAN Communication Circuit, <u>ESP/TCS/ABS Control Unit and Steering Angle Sensor"</u> for "ABS". Refer to <u>BCS-40</u>, "CAN Communication Line Check" for "SMART ENTRANCE".
- NG >> Replace ECM and/or Combination meter.

Component Inspection 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	Applox. 100 - 132



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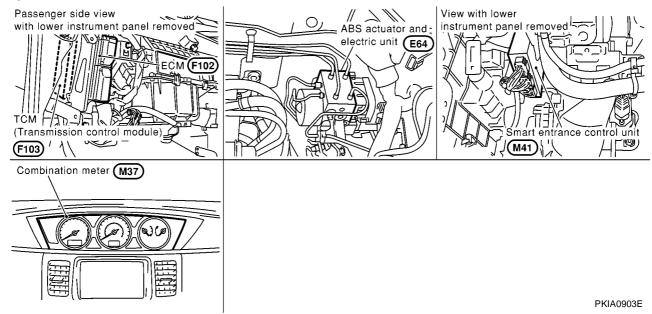
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System Description

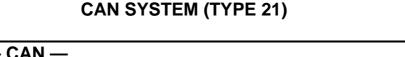
CAN (Controller Area Network) is a serial communication line for real time application. It is an on-vehicle multiplex communication line with high data communication speed and excellent error detection ability. Many electronic control units are equipped onto a vehicle, and each control unit shares information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

Component Parts and Harness Connector Location

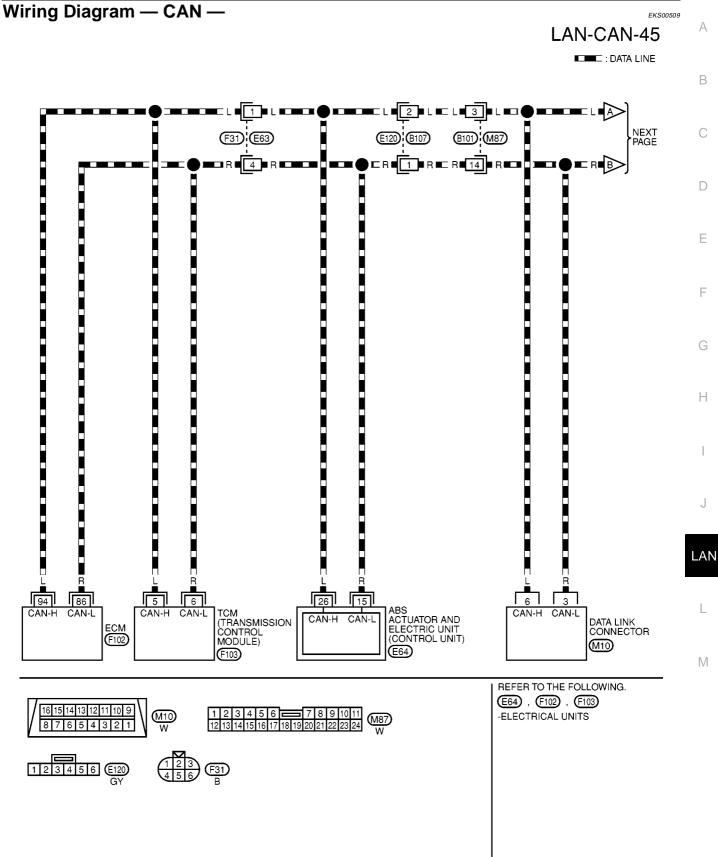


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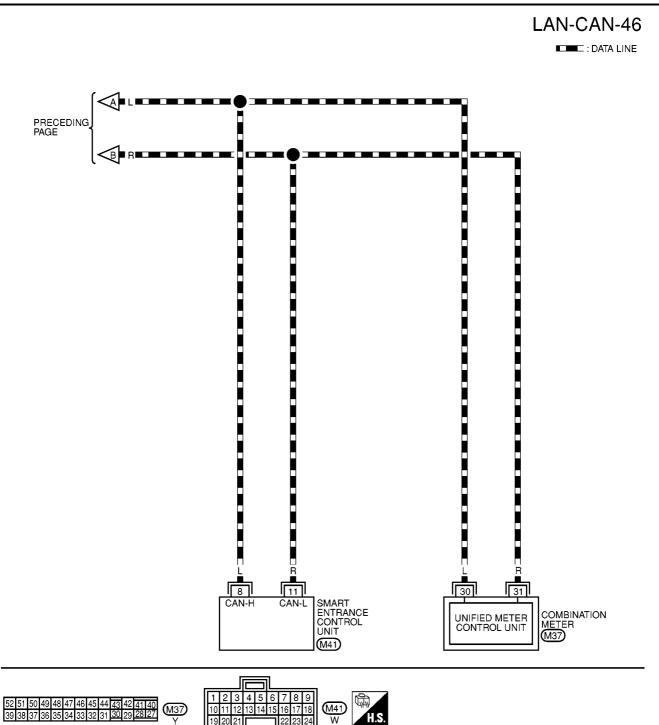


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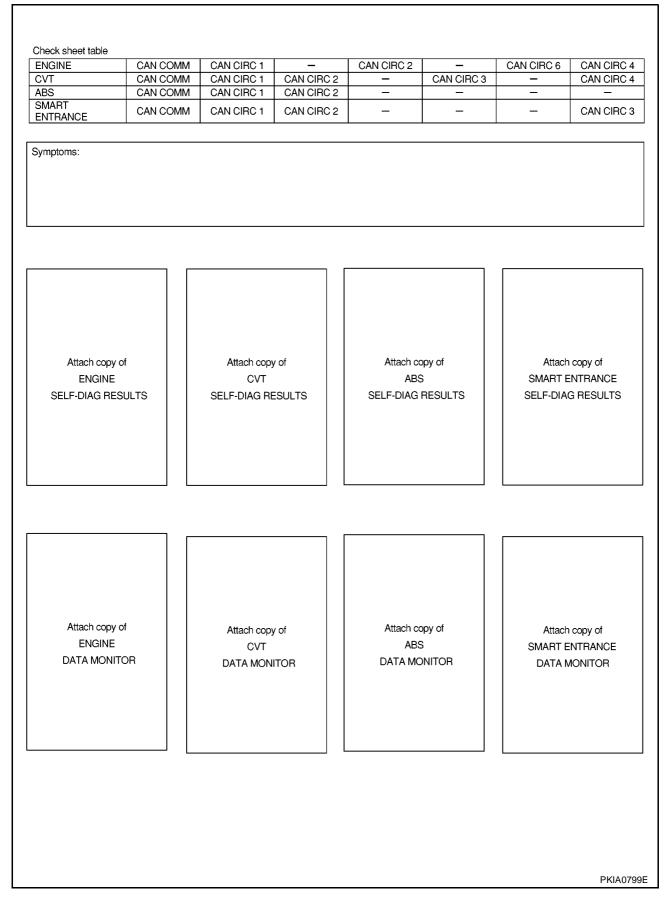
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Wo	ork Flow EKS0050A	
1.	Print all the data of "SELF-DIAG RESULTS" and "DATA MONITOR" for "ENGINE", "CVT", "ABS", and "SMART ENTRANCE" displayed on CONSULT-II. Refer to <u>EC-1083, "DTC U1000, U1001 CAN COMMU-NICATION LINE"</u> (WITH EURO-OBD) or <u>EC-1505, "DTC U1000, U1001 CAN COMMUNICATION LINE"</u>	A
	(WITHOUT EURO-OBD) for "ENGINE" and Refer to <u>CVT-118</u> , " <u>DTC U1000 CAN COMMUNICATION</u> <u>LINE</u> " (EURO-OBD) or <u>CVT-201</u> , " <u>CAN COMMUNICATION LINE</u> " (ALL) for "CVT". Refer to <u>BRC-33</u> , "CAN Communication Circuit" for "ABS". Refer to BCS-40, "CAN Communication Line Check" for	В
	"SMART ENTRANCE".	С
2.	Attach the printed sheet of "SELF-DIAG RESULTS" and "DATA MONITOR" onto the check sheet. Refer to LAN-426, "CHECK SHEET"	0
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"	D
	NOTE:	
	If "NG" is displayed on "CAN COMM" for the diagnosed control unit, replace the control unit.	Е
4.	According to the check sheet results (example), start inspection. Refer to <u>LAN-427</u> , <u>"CHECK SHEET</u> <u>RESULTS (EXAMPLE)"</u>	
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CHECK SHEET



CHECK SHEET RESULTS (EXAMPLE)

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VT	CAN COMM	CAN CIRC 1	CAN CIRC 2	-	CAN CIRC 3		CAN CIRC 4
BS	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	_	CANORC 2	_	CANORC 6	CANORC 4
ENGINE CVT	CAN COMM CAN COMM	CAN CIRC 1	CAN CIRC 2		CAN CIRC 3		CAN CIRC 4
ABS			CAN CIRC 2 CAN CIRC 2	_	CAN CIRC 3		CAN CIRC 4
SMART	CAN COMM	CAN CIRC 1		_	_		-
	CAN COMM	CAN CIRC 1	CAN CIRC 2	_	_	_	CAN CIRC 3
se 2: Replace TCI							
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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
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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.

LAN-428

PKIA0801E

[CAN]	
INSPECTION	
Proceed trouble diagnosis according to the check sheet results (example). Case 1:Replace ECM.	А
Case 2:Replace TCM. Case 3:Replace ABS actuator and electric unit (control unit).	
Case 4:Replace Smart entrance control unit.	В
Case 5:Check Harness between TCM and ABS actuator and electric unit (control unit). Refer to <u>LAN-429</u> , <u>"Circuit Check Between TCM and ABS Actuator and Electric Unit (control unit)"</u>	С
Case 6:Check Harness between ABS actuator and electric unit (control unit) and Smart entrance control unit. Refer to <u>LAN-430</u> , "Circuit Check Between ABS Actuator and Electric Unit (control unit) and Smart Entrance Control Unit"	0
Case 7:Check ECM Circuit. Refer to <u>LAN-431, "ECM Circuit Check"</u> Case 8:Check TCM Circuit. Refer to <u>LAN-432, "TCM Circuit Check"</u>	D
Case 9:Check ABS actuator and electric unit (control unit) Circuit. Refer to <u>LAN-432</u> , " <u>ABS Actuator and Elec-</u> <u>tric Unit (control unit) Circuit Check</u> " Case 10:Check Smart entrance control unit Circuit. Refer to <u>LAN-433</u> , " <u>Smart Entrance Control Unit Circuit</u> Check"	E
Case 11:Check Combination meter Circuit. Refer to <u>LAN-433, "Combination Meter Circuit Check"</u> Case 12:Check CAN communication Circuit. Refer to <u>LAN-434, "CAN Communication Circuit Check"</u>	F
Circuit Check Between TCM and ABS Actuator and Electric Unit (control unit)	
1. CHECK CONNECTOR	G
1. Turn ignition switch OFF.	
2. Disconnect the negative battery terminal.	Н
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). 	
<u>OK or NG</u>	J
OK >> GO TO 2.	
NG >> Repair terminal or connector.	LAN
2. CHECK HARNESS FOR OPEN CIRCUIT	

- Disconnect TCM connector and harness connector F31. 1.
- 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.

BAT TCM connector Harness connector O CONNECTOR тсм 5, 6 5 PKIA0864E L

Μ

3. CHECK HARNESS FOR OPEN CIRCUIT

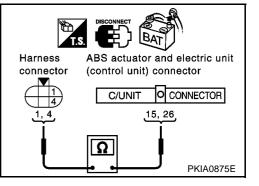
- 1. Disconnect ABS actuator and electric unit (control unit) connector.
- 2. Check continuity between harness connector E63 terminals 1 (L), 4 (R) and ABS actuator and electric unit (control unit) harness connector E64 terminals 26 (L), 15 (R).
 - 1(L) 26(L)4(R) - 15(R)

: Continuity should exist.

: 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.
- Check continuity between ABS actuator and electric unit (control 2. unit) harness connector E64 terminals 26 (L), 15 (R) and harness connector E120 terminals 2 (L), 1 (R).
 - 26(L) 2(L)
 - 15(R) 1(R)

: Continuity should exist. : Continuity should exist.

OK or NG

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

ABS actuator and electric unit Harness
(control unit) connector connector
15, 26
PKIA0876E

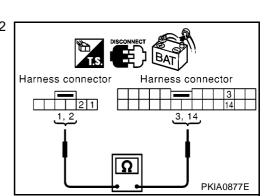
. .

3. CHECK HARNESS FOR OPEN CIRCUIT

- 1. Disconnect harness connector B101.
- 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)

OK or NG

- OK >> GO TO 4.
- NG >> Repair harness.



Harness connector

3, 14

3

14

4. CHECK HARNESS FOR OPEN CIRCUIT

- 1. Disconnect smart entrance control unit connector.
- 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.

: Continuity should exist.

14(R) - 11(R)



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 <u>EC-1083</u>, "<u>DTC U1000</u>, <u>U1001</u> <u>CAN COMMUNICATION LINE</u>" (WITH EURO-OBD) or EC-1505, "DTC, U1000, U1001, CAN, COMMUNICATION

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 <u>BRC-33</u>, "CAN Communication Circuit" for "ABS". Refer to <u>BCS-40</u>, "CAN Communication Line Check" for "SMART ENTRANCE".

NG >> Repair harness.

ECM Circuit Check

- 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.

[CAN]

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Smart entrance

control unit connector

8, 11

PKIA0878E

EKS0050D

Ω



$\overline{2}$. CHECK HARNESS FOR OPEN CIRCUIT

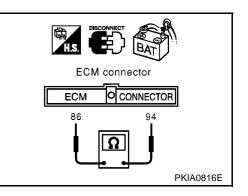
- 1. Disconnect ECM connector.
- Check resistance between ECM harness connector F102 terminals 94(L) and 86(R).

94(L) - 86(R)

: Approx. 108 – 132Ω

OK or NG

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



TCM Circuit Check

EKS0050E

EKS0050F

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.

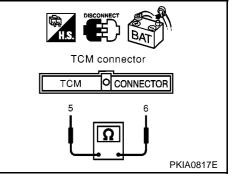
2. CHECK HARNESS FOR OPEN CIRCUIT

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

: Approx. 54 – 66 Ω

OK or NG

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



ABS Actuator and Electric Unit (control unit) Circuit Check

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.

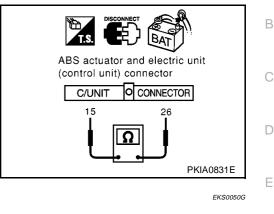
$\overline{2}$. CHECK HARNESS FOR OPEN CIRCUIT

- 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

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 connec- (tion.(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 – 66 Ω

OK or NG

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

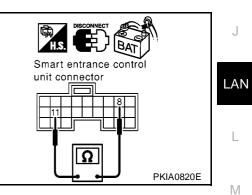


1. CHECK CONNECTOR

- 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.



EKS0050H

[CAN]

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2. CHECK HARNESS FOR OPEN CIRCUIT

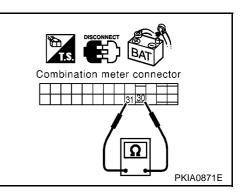
- 1. Disconnect combination meter connector.
- 2. Check resistance between combination meter harness connector M37 terminals 30(L) and 31(R).

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

1. CHECK CONNECTOR

EKS00501

- 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

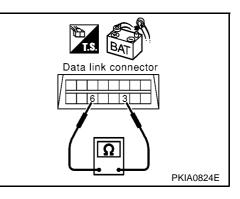
- 1. Disconnect the following connectors.
- Combination meter connector.
- Smart entrance control unit connector.
- Harness connector M87.
- Check continuity between Data link connector M10 terminals 6 (L) and 3(R).

6(L) - 3(R)

: Continuity should not exist.

OK or NG

- OK >> GO TO 3. NG >> • Repair h
 - 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
- 3(R) ground

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.

: Continuity should not exist.

: Continuity should not exist.

4. CHECK HARNESS FOR SHORT CIRCUIT

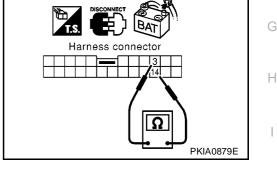
- 1. Disconnect harness connector B107.
- Check continuity between harness connector B101 terminals 3 (L) and 14(R).
 - 3(L) 14(R)

: Continuity should not exist.

OK or NG

OK >> GO TO 5.

NG >> Repair harness between harness connector B101 and harness connector B107.



Harness connector

3, 14

5. CHECK HARNESS FOR SHORT CIRCUIT

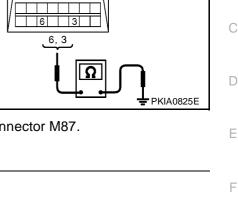
Check continuity between harness connector B101 terminals 3 (L), 14(R) and ground

- 3(L) ground
- : Continuity should not exist. : Continuity should not exist.
- 14(R) ground

OK or NG

OK >> GO TO 6.

NG >> Repair harness between harness connector B101 and harness connector B107.



Data link connector

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LAN

PKIA0880E

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

NG

OK >> GO TO 7.

- >> 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.

: Continuity should not exist.

15(R) – ground

: Continuity should not exist.

OK or NG

OK >> GO TO 8. NG >> • Repair

>> • Repair harness between ABS actuator and electric unit (control unit) and harness connector E120.

• Repair harness between harness connector E120 and harness connector E63.

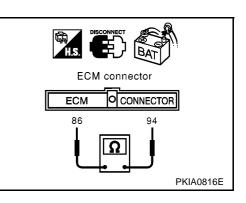
8. CHECK HARNESS FOR SHORT CIRCUIT

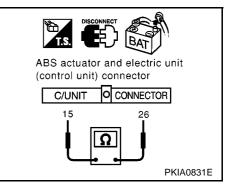
- 1. Disconnect ECM connector and TCM connector.
- Check continuity between ECM harness connector F102 terminals 94 (L) and 86(R).

94(L) - 86(R)

OK or NG

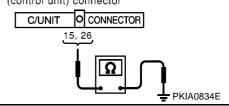
- OK >> GO TO 9.
- NG >> Repair harness between ECM and harness connector F31.
 - Repair harness between TCM and harness connector F31.







ABS actuator and electric unit (control unit) connector



: Continuity should not exist.

: Continuity should not exist.

9. CHECK HARNESS FOR SHORT CIRCUIT

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

- 94(L) ground
- 86(R) ground

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 <u>LAN-437, "ECM / COMBINATION METER INTERNAL CIRCUIT</u> <u>INSPECTION"</u>

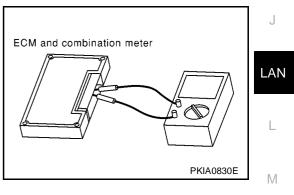
OK or NG

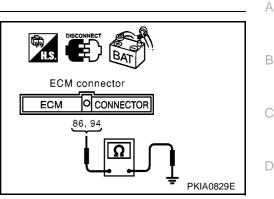
- OK >> Reconnect all connectors to perform "SELF-DIAG RESULTS" and "DATA MONITOR" for "ENGINE", "CVT", "ABS", and "SMART ENTRANCE" displayed on CONSULT-II. Refer to <u>EC-</u> <u>1083, "DTC U1000, U1001 CAN COMMUNICATION LINE"</u> (WITH EURO-OBD) or <u>EC-1505,</u> "DTC U1000, U1001 CAN COMMUNICATION LINE" (WITHOUT EURO-OBD) for "ENGINE" and Refer to <u>CVT-118, "DTC U1000 CAN COMMUNICATION LINE"</u> (EURO-OBD) or <u>CVT-201, "CAN</u> <u>COMMUNICATION LINE"</u> (ALL) for "CVT". Refer to <u>BRC-33, "CAN Communication Circuit"</u> for "ABS". Refer to <u>BCS-40, "CAN Communication Line Check"</u> for "SMART ENTRANCE".
- NG >> Replace ECM and/or Combination meter.

Component Inspection 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	Applox. 100 - 132





EKS0050J

E

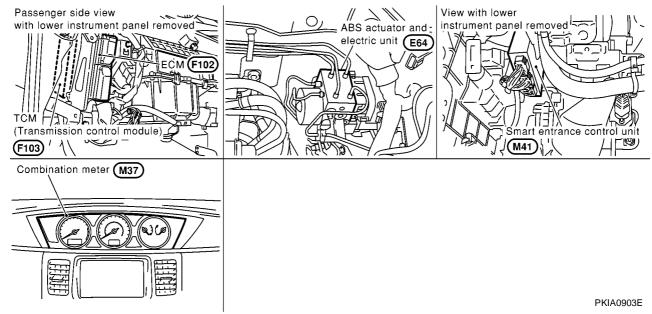
F

[CAN]

System Description

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

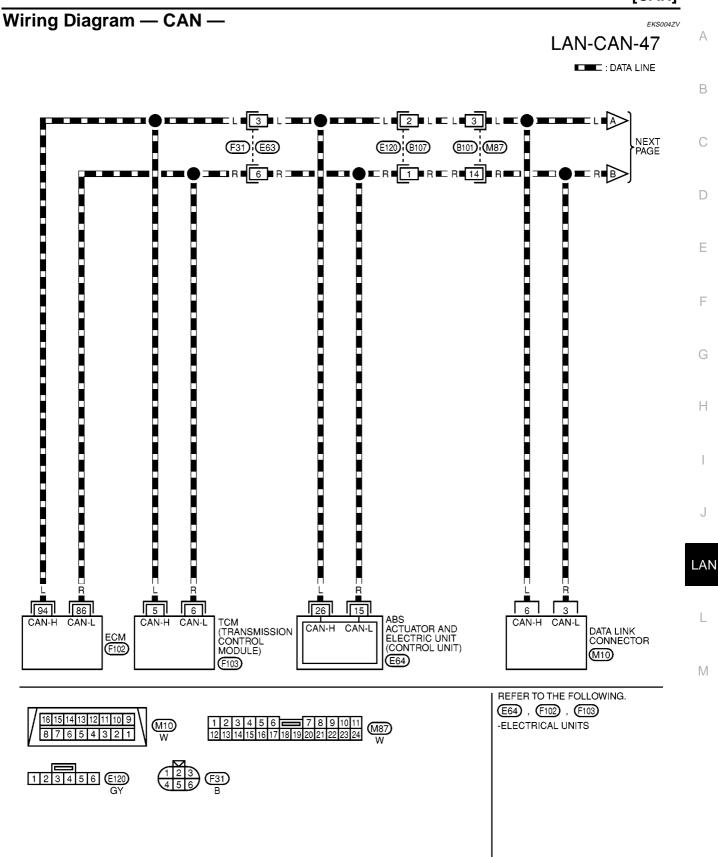
Component Parts and Harness Connector Location



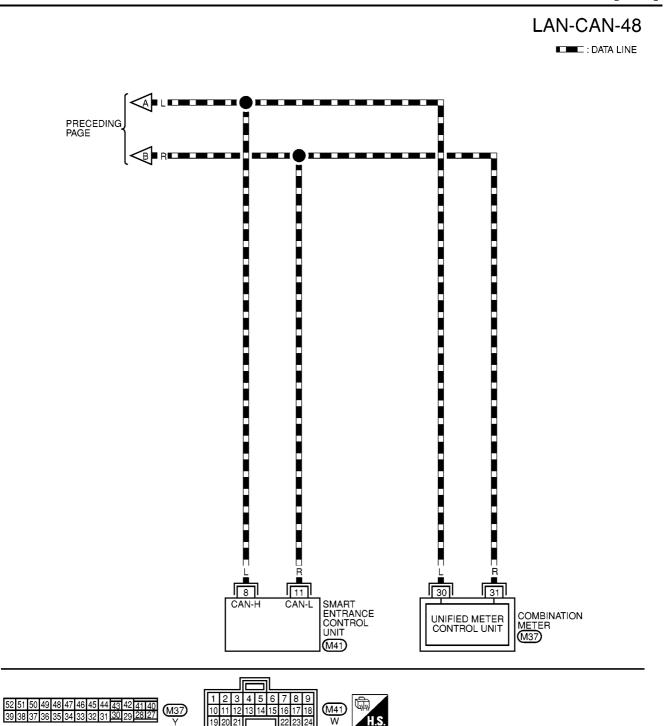
EKS004ZT

EKS004ZU

[CAN]



MKWA0384E



MKWA0385E

19 20 21

22 23 24

[CAN]

W	ork 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 <u>EC-150</u> , " <u>DTC U1000</u> , <u>U1001 CAN COMMU-NICATION LINE</u> " (WITH EURO-OBD) or <u>EC-663</u> , " <u>DTC U1000</u> , <u>U1001 CAN COMMUNICATION LINE</u> "	A
	(WITHOUT EURO-OBD) for "ENGINE" and Refer to <u>AT-190, "DTC U1000 CAN COMMUNICATION LINE"</u> (EURO-OBD) or <u>AT-393, "CAN COMMUNICATION LINE"</u> (ALL) for "A/T". Refer to <u>BRC-33, "CAN Com-</u> <u>munication Circuit"</u> for "ABS". Refer to <u>BCS-40, "CAN Communication Line Check"</u> for "SMART ENTRANCE".	В
2.		С
3.	Based on the data monitor results, put "v" marks onto the items with "UNKWN" or "NG" in the check sheet table. Refer to <u>LAN-442</u> , "CHECK SHEET"	D
	NOTE: If "NG" is displayed on "CAN COMM" for the diagnosed control unit, replace the control unit.	Е
4.	According to the check sheet results (example), start inspection. Refer to <u>LAN-443</u> , "CHECK SHEET <u>RESULTS (EXAMPLE)</u> "	
		F
		G
		Η
		I
		J
		LAN

L

M

CHECK SHEET

CAN COMM	CAN CIRC 1	_	CAN CIRC 2	_	CAN CIRC 6	CAN CIRC 4
		CAN CIRC 2	-	_	-	CAN CIRC 4
CAN COMM	CAN CIRC 1	CAN CIRC 2	_	_	-	-
			_	_	_	CAN CIRC 3
of	A/T		ABS	i	SMART E	copy of NTRANCE & RESULTS
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CHECK SHEET RESULTS (EXAMPLE)

	M						
	CANCOMM	CAN CIRC 1	_	CAN CIRC 2	-	CAN CIRC 6	CAN CIRC 4
¥Τ	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	<u> </u>	CANORC 2	_	CAN CIRC 6	CANCIRC 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
ase 2: Replace TCI							
ENGINE	CAN COMM	CAN CIRC 1		CANORC 2	_	CAN CIRC 6	CAN CIRC 4
A/T		CAN CIRC 1	CAN CIRC 2		_		CAN CIRC 4
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	<u>├──</u>			
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	<u> </u>	_		
SMART						+	
ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2	-	_	—	CAN CIRC 3
ABS SMART	CANCOMM CAN COMM	CAN CIRC 1 CAN CIRC 1	CAN CIRC 2 CAN CIRC 2	-	_	-	CAN CIRC 3
ENTRANCE			L				
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	CANORC 2	-	_	_	_
SMART	CAN COMM	CAN CIRC 1	CAN CIRC 2	-	_	-	CAN CIRC 3
		CAN CIRC 1	CAN CIRC 2		-		CAN CIRC 3
SMART ENTRANCE ase 4: Replace Sm	CAN COMM	I	CAN CIRC 2	·	-		
SMART ENTRANCE ase 4: Replace Sm. ENGINE	CAN COMM	nit CAN CIRC 1		CAN CIRC 2			CAN CIRC 4
SMART ENTRANCE ase 4: Replace Sm ENGINE A/T	CAN COMM	nit CAN CIRC 1 CAN CIRC 1	 CAN CIRC 2	CAN CIRC 2		CAN CIRC 6	
SMART ENTRANCE ase 4: Replace Sm ENGINE A/T ABS	CAN COMM	nit CAN CIRC 1		·			CAN CIRC 4
SMART ENTRANCE ase 4: Replace Sm ENGINE A/T	CAN COMM	nit CAN CIRC 1 CAN CIRC 1	 CAN CIRC 2	CAN CIRC 2		CAN CIRC 6	CAN CIRC 4
SMART ENTRANCE ase 4: Replace Sm ENGINE A/T ABS SMART ENTRANCE	CAN COMM	nit CAN CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1	– CAN CIRC 2 CAN CIRC 2	CAN CIRC 2 — — —	- - - -	CAN CIRC 6 — — — —	CAN CIRC 4 CAN CIRC 4 — CAN CIRC 3
SMART ENTRANCE ase 4: Replace Sm ENGINE A/T ABS SMART ENTRANCE ENGINE	CAN COMM	nit CAN CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1	- CAN CIRC 2 CAN CIRC 2 CAN CIRC 2	CAN CIRC 2	 	CAN CIRC 6	CAN CIRC 4 CAN CIRC 4 — CAN CIRC 3 CAN CIRC 4
SMART ENTRANCE ase 4: Replace Sm ENGINE A/T ABS SMART ENTRANCE ENGINE A/T	CAN COMM	nit CAN CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1	- CAN CIRC 2 CAN CIRC 2 CAN CIRC 2 - CAN CIRC 2	CAN CIRC 2 	- - - - -	CAN CIRC 6 — — — — — — — — — — — — —	CAN CIRC 4 CAN CIRC 4 — CAN CIRC 3
SMART ENTRANCE ase 4: Replace Sm ENGINE A/T ABS SMART ENTRANCE ENGINE A/T ABS	CAN COMM	nit CAN CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1	CAN CIRC 2 CAN CIRC 2 CAN CIRC 2 CAN CIRC 2 CAN CIRC 2 CAN CIRC 2 CAN CIRC 2	CAN CIRC 2 — — —	- - - -	CAN CIRC 6 — — — —	CAN CIRC 4 CAN CIRC 4 — CAN CIRC 3 CAN CIRC 3 CAN CIRC 4 CAN CIRC 4 —
SMART ENTRANCE ase 4: Replace Sm ENGINE A/T ABS SMART ENTRANCE ENGINE A/T	CAN COMM	nit CAN CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1	- CAN CIRC 2 CAN CIRC 2 CAN CIRC 2 - CAN CIRC 2	CAN CIRC 2 	- - - - -	CAN CIRC 6 — — — — — — — — — — — — —	CAN CIRC 4 CAN CIRC 4 — CAN CIRC 3 CAN CIRC 4
SMART ENTRANCE ase 4: Replace Sm ENGINE A/T ABS SMART ENTRANCE ENGINE A/T ABS SMART ENTRANCE	CAN COMM	nit CAN CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1	CAN CIRC 2 CAN CIRC 2 CAN CIRC 2 CAN CIRC 2 CAN CIRC 2 CAN CIRC 2 CAN CIRC 2	CAN CIRC 2 	- - - - -	CAN CIRC 6 — — — — — — — — — — — — —	CAN CIRC 4 CAN CIRC 4 — CAN CIRC 3 CAN CIRC 3 CAN CIRC 4 CAN CIRC 4 —
SMART ENTRANCE ase 4: Replace Sm ENGINE A/T ABS SMART ENTRANCE ENGINE A/T ABS SMART ENTRANCE	CAN COMM	nit CAN CIRC 1 CAN CIRC 1	CAN CIRC 2 CAN CIRC 2 CAN CIRC 2 CAN CIRC 2 CAN CIRC 2 CAN CIRC 2 CAN CIRC 2	CAN CIRC 2 CAN CIRC 2 CAN CIRC 2		CAN CIRC 6 — — — — — — — — — — — — — — — — —	CAN CIRC 4 CAN CIRC 4 CAN CIRC 3 CAN CIRC 4 CAN CIRC 4 CAN CIRC 4 CAN CIRC 3
SMART ENTRANCE ase 4: Replace Sm. ENGINE A/T ABS SMART ENTRANCE ENGINE A/T ABS SMART ENTRANCE SMART ENTRANCE	CAN COMM	nit CAN CIRC 1 CAN CIRC 1	CAN CIRC 2 CAN CIRC 2	CAN CIRC 2 	- - - - -	CAN CIRC 6 — — — — — — — — — — — — —	CAN CIRC 4 CAN CIRC 4 CAN CIRC 3 CAN CIRC 4 CAN CIRC 4 CAN CIRC 4 CAN CIRC 3
SMART ENTRANCE ase 4: Replace Sm ENGINE A/T ABS SMART ENTRANCE ENGINE A/T ABS SMART ENTRANCE	CAN COMM	nit CAN CIRC 1 CAN CIRC 1	CAN CIRC 2 CAN CIRC 2	CAN CIRC 2 CAN CIRC 2 CAN CIRC 2 CAN CIRC 2		CAN CIRC 6 — — — — — — — — — — — — — — — — —	CAN CIRC 4 CAN CIRC 4 CAN CIRC 3 CAN CIRC 4 CAN CIRC 4 CAN CIRC 4 CAN CIRC 3
SMART ENTRANCE ase 4: Replace Sm. ENGINE A/T ABS SMART ENTRANCE ENGINE A/T ABS SMART ENTRANCE SMART ENTRANCE	CAN COMM	nit CAN CIRC 1 CAN CIRC 1	CAN CIRC 2 CAN CIRC 2	CAN CIRC 2 CAN CIRC 2 CAN CIRC 2		CAN CIRC 6 — — — — — — — — — — — — — — — — —	CAN CIRC 4 CAN CIRC 4 CAN CIRC 3 CAN CIRC 4 CAN CIRC 4 CAN CIRC 4 CAN CIRC 3

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Case 6

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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	—	—	—	CANCIRC 4
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	—	—	_	—
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CANCIRC 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	CANCIRC 2	_	_	_	CAN CIRC 3

.....

Case 8

ENGINE	CAN COMM	CAN CIRC 1	—	CAN ARC 2	—	CAN CIRC 6	CAN CIRC 4
A/T	CAN COMM	CAN CIRC 1	CAN CIRC 2	_	-	—	CAN ORC 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 CARC 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 ORC 3

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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	Ι	_	_	CANCIRC 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	-	-	_	CANCIRC 4
ABS	CAN COMM	CANCIRC 1	CAN CIRC 2	_	_	-	-
SMART ENTRANCE	CAN COMM	CANCIRC 1	CAN RC 2	_	_	_	CAN CIRC 3

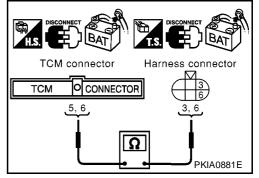
NOTE:

If "NG" is displayed on "CAN COMM" for the diagnosed control unit, replace the control unit.

LAN-444

[CAN]	
INSPECTION	
Proceed trouble diagnosis according to the check sheet results (example). Case 1:Replace ECM.	А
Case 2:Replace TCM. Case 3:Replace ABS actuator and electric unit (control unit). Case 4:Replace Smart entrance control unit.	В
Case 5:Check Harness between TCM and ABS actuator and electric unit (control unit). Refer to <u>LAN-445</u> , <u>"Circuit Check Between TCM and ABS Actuator and Electric Unit (control unit)"</u> Case 6:Check Harness between ABS actuator and electric unit (control unit) and Smart entrance control unit. Refer to <u>LAN-446</u> , "Circuit Check Between ABS Actuator and Electric Unit (control unit) and Smart Entrance	С
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"	D
Case 9:Check ABS actuator and electric unit (control unit) Circuit. Refer to <u>LAN-448</u> , " <u>ABS Actuator and Elec-</u> <u>tric Unit (control unit) Circuit Check</u> " Case 10:Check Smart entrance control unit Circuit. Refer to <u>LAN-449</u> , " <u>Smart Entrance Control Unit Circuit</u> Check"	Е
Case 11:Check Combination meter Circuit. Refer to <u>LAN-449</u> , "Combination Meter Circuit Check" Case 12:Check CAN communication Circuit. Refer to <u>LAN-450</u> , "CAN Communication Circuit Check"	F
Circuit Check Between TCM and ABS Actuator and Electric Unit (control unit)	
1. CHECK CONNECTOR	G
1. Turn ignition switch OFF.	
2. Disconnect the negative battery terminal.	Н
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). 	J
OK or NG	0
OK >> GO TO 2. NG >> Repair terminal or connector.	LAN
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.



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3. CHECK HARNESS FOR OPEN CIRCUIT

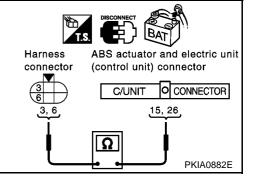
- 1. Disconnect ABS actuator and electric unit (control unit) connector.
- Check continuity between harness connector E63 terminals 3 (L), 6 (R) and ABS actuator and electric unit (control unit) harness connector E64 terminals 26 (L), 15 (R).
 - 3(L) 26(L)6(R) - 15(R)

: Continuity should exist.

: 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 CON-SULT-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

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)

15(R) - 1(R)

: Continuity should exist. : Continuity should exist.

OK or NG

OK >> GO TO 3.

NG >> Repair harness.

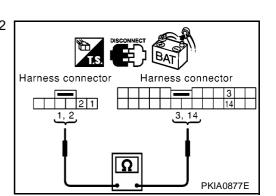
ABS actuator and electric unit Harness (control unit) connector connector C/UNIT O CONNECTOR 15, 26 1, 2 PKIA0876E

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).
 - : Continuity should exist. 2(L) - 3(L)
 - 1(R) 14(R)

OK or NG

- OK >> GO TO 4.
- NG >> Repair harness.



Smart entrance

control unit connector

8, 11

PKIA0878E

EKS004ZZ

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Harness connector

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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.

: 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 CON-SULT-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

1. CHECK CONNECTOR

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

OK or NG

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

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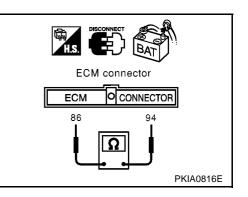
- 1. Disconnect ECM connector.
- Check resistance between ECM harness connector F102 terminals 94(L) and 86(R).

94(L) - 86(R)

: **Approx. 108 – 132**Ω

OK or NG

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



TCM Circuit Check

EK\$00500

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.

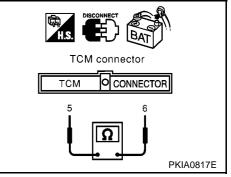
2. CHECK HARNESS FOR OPEN CIRCUIT

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

: Approx. 54 – 66 Ω

OK or NG

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



ABS Actuator and Electric Unit (control unit) Circuit Check

1. CHECK CONNECTOR

EKS00501

- 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.

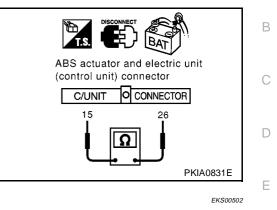
$\overline{2}$. CHECK HARNESS FOR OPEN CIRCUIT

- 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

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 connec- (tion.(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 – 66 Ω

OK or NG

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

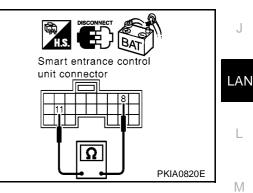


1. CHECK CONNECTOR

- 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.



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2. CHECK HARNESS FOR OPEN CIRCUIT

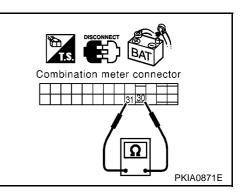
- 1. Disconnect combination meter connector.
- 2. Check resistance between combination meter harness connector M37 terminals 30(L) and 31(R).

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

1. CHECK CONNECTOR

EKS00504

- 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

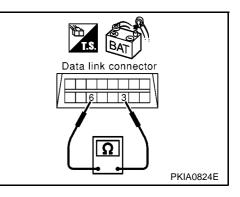
- 1. Disconnect the following connectors.
- Combination meter connector.
- Smart entrance control unit connector.
- Harness connector M87.
- Check continuity between Data link connector M10 terminals 6 (L) and 3(R).

6(L) - 3(R)

: Continuity should not exist.

OK or NG

- OK >> GO TO 3. NG >> • Repair h
 - > 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 to	erminals 6 (L),
3(R) and ground.	

- 6(L) ground
- 3(R) ground

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.

: Continuity should not exist.

: Continuity should not exist.

4. CHECK HARNESS FOR SHORT CIRCUIT

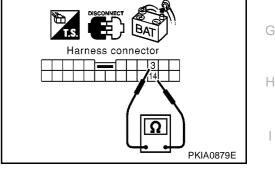
- 1. Disconnect harness connector B107.
- Check continuity between harness connector B101 terminals 3 (L) and 14(R).
 - 3(L) 14(R)

: 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

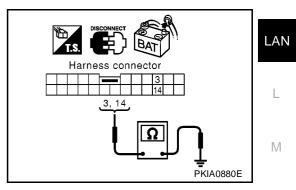
Check continuity between harness connector B101 terminals 3 (L), 14(R) and ground

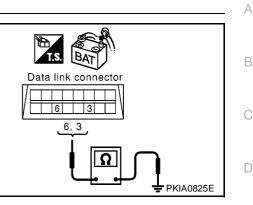
- 3(L) ground
- : Continuity should not exist. : Continuity should not exist.
- 14(R) ground

OK or NG

OK >> GO TO 6.

NG >> Repair harness between harness connector B101 and harness connector B107.





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6. CHECK HARNESS FOR SHORT CIRCUIT

- 1. Disconnect the following connectors.
- ABS actuator and electric unit (control unit) connector. _
- Harness connector E63.
- Check continuity between ABS actuator and electric unit (control 2. unit) harness connector E64 terminals 26 (L) and 15(R).

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

OK or NG

NG

OK >> GO TO 7.

- >> Repair harness between ABS actuator and electric unit (control unit) and harness connector E120.
 - Repair harness between harness connector E120 and harness connector E63.

1. 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. : Continuity should not exist.

15(R) – ground

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.

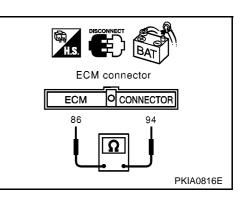
8. CHECK HARNESS FOR SHORT CIRCUIT

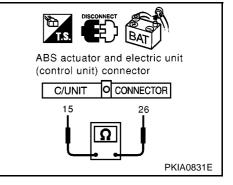
- Disconnect ECM connector and TCM connector. 1.
- Check continuity between ECM harness connector F102 termi-2. nals 94 (L) and 86(R).

94(L) - 86(R)

OK or NG

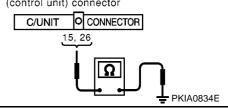
- OK >> GO TO 9.
- NG >> • Repair harness between ECM and harness connector F31.
 - Repair harness between TCM and harness connector F31.







ABS actuator and electric unit (control unit) connector



: Continuity should not exist.

: Continuity should not exist.

: Continuity should not exist.

9. CHECK HARNESS FOR SHORT CIRCUIT

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

- 94(L) ground
- 86(R) ground

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 <u>LAN-453</u>, "ECM / COMBINATION METER INTERNAL CIRCUIT INSPECTION"

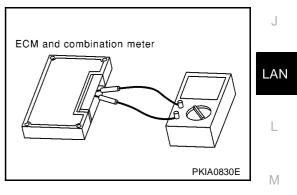
OK or NG

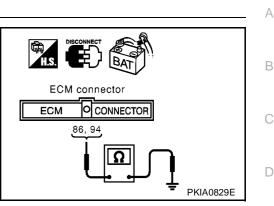
- OK >> Reconnect all connectors to perform "SELF-DIAG RESULTS" and "DATA MONITOR" for "ENGINE", "A/T", "ABS", and "SMART ENTRANCE" displayed on CONSULT-II. Refer to <u>EC-150,</u> "DTC U1000, U1001 CAN COMMUNICATION LINE" (WITH EURO-OBD) or <u>EC-663, "DTC</u> U1000, U1001 CAN COMMUNICATION LINE" (WITHOUT EURO-OBD) for "ENGINE" and Refer to <u>AT-190, "DTC U1000 CAN COMMUNICATION LINE"</u> (EURO-OBD) or <u>AT-393, "CAN COMMU-NICATION LINE"</u> (ALL) for "A/T". Refer to <u>BRC-33, "CAN Communication Circuit"</u> for "ABS". H Refer to <u>BCS-40, "CAN Communication Line Check"</u> for "SMART ENTRANCE".
- NG >> Replace ECM and/or Combination meter.

Component Inspection 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	Appioz. 100 - 132





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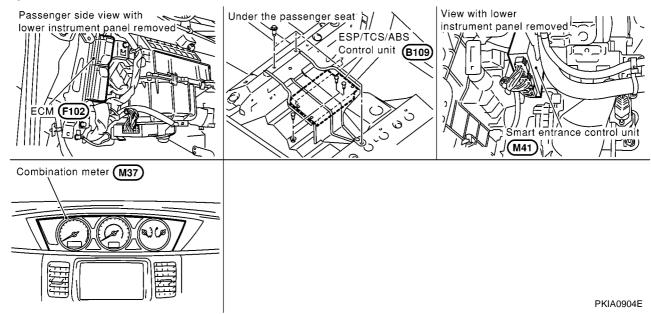
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[CAN]

System Description

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

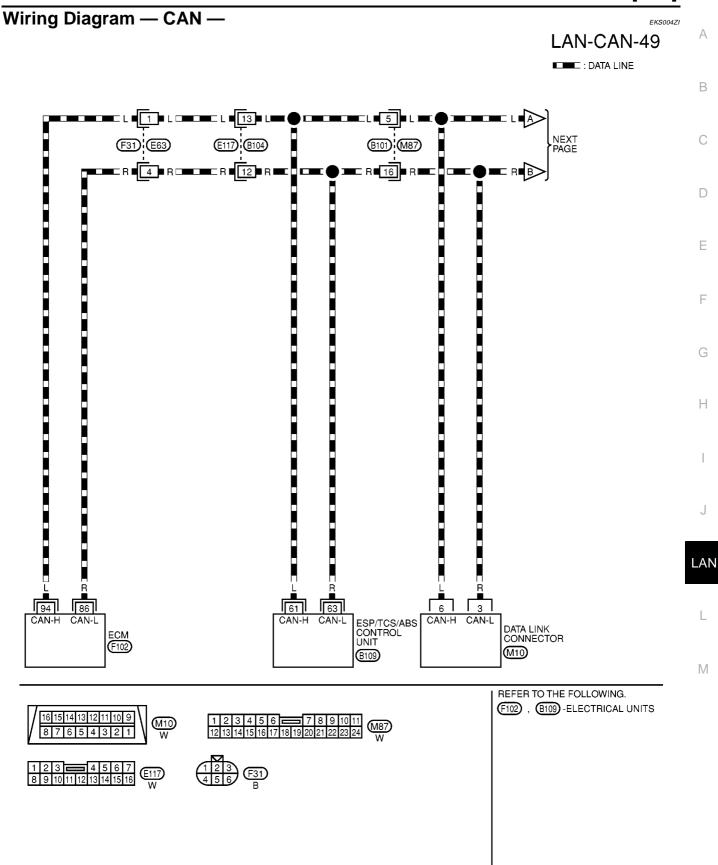
Component Parts and Harness Connector Location



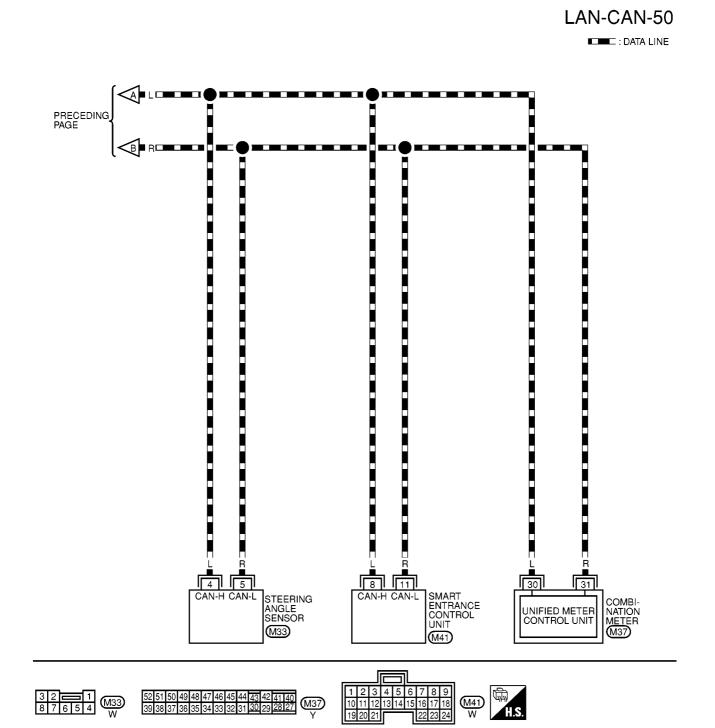
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[CAN]



MKWA0386E



Wo	Drk 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 <u>EC-1083</u> , " <u>DTC U1000</u> , <u>U1001 CAN COMMUNICA-TION LINE</u> " (WITH EURO-OBD) or <u>EC-1505</u> , " <u>DTC U1000</u> , <u>U1001 CAN COMMUNICATION LINE</u> " (WITHOUT EURO-OBD) for "ENGINE" and Refer to <u>BRC-107</u> , "Inspection 15 CAN Communication Cir-	A
	cuit, ESP/TCS/ABS Control Unit and Steering Angle Sensor ["] for "ABS". Refer to <u>BCS-40</u> , "CAN Commu- nication Line Check" for "SMART ENTRANCE".	
2.	Attach the printed sheet of "SELF-DIAG RESULTS" and "DATA MONITOR" onto the check sheet. Refer to <u>LAN-458, "CHECK SHEET"</u>	С
3.	Based on the data monitor results, put "v" marks onto the items with "UNKWN" or "NG" in the check sheet table. Refer to <u>LAN-458</u> , "CHECK SHEET"	D
	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 <u>LAN-459</u> , <u>"CHECK SHEET</u> <u>RESULTS (EXAMPLE)"</u>	Е
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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

Attach copy of	Attach copy of	Attach copy of
ENGINE	ABS	SMART ENTRANCE
SELF-DIAG RESULTS	SELF-DIAG RESULTS	SELF-DIAG RESULTS
Attach copy of	Attach copy of	Attach copy of
ENGINE	ABS	SMART ENTRANCE
DATA MONITOR	DATA MONITOR	DATA MONITOR

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CHECK SHEET RESULTS (EXAMPLE)

	CANCOMM	CAN CIRC 1	_	CAN CIRC 3	_	CAN CIRC 6	CAN CIRC 4
ENGINE 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	_	CANOTRC 3	_	CAN CARC 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
ase 2: Replace ESP/TCS		0.000.0000.0					
ENGINE ABS		CAN CIRC 1 CAN CIRC 1	– CAN CIRC 2	CANKORC 3		CAN CIRC 6	CAN CIRC 4
SMART ENTRANCE	CAN COMM CAN COMM	CAN CIRC 1	CAN CIRC 2		CAN CIRC 5		CAN CIRC 3
SMART ENTRANCE		CAN CIRC I	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
		5		1	1	1	
ano 2: Poplano Smort an							
ase 3: Replace Smart en ENGINE	CAN COMM	CAN CIRC 1	_		_		
ABS	CAN COMM CAN COMM	CAN CIRC 1 CAN CIRC 1		CAN CIRC 3		CAN CIRC 6	CAN CIRC 4
ABS SMART ENTRANCE		CAN CIRC 1 CAN CIRC 1	CAN CIRC 2 CAN CIRC 2		CAN CIRC 5		CAN CIRC 3
SWADT ENTRANCE	CARECIVIN		CAN CIRC 2				CAN CIRC 3
ENGINE	CAN COMM	CAN CIRC 1	_	CAN CIRC 3			CAN CIRC 4
ABS	CAN COMM CAN COMM	CAN CIRC 1 CAN CIRC 1	CAN CIRC 2		CAN CIRC 5	CAN CIRC 6	
ABS SMART ENTRANCE	CAN COMM	CAN CIRC 1	CANCIRC 2	_		_	CANVIRC 3
			0/11	1	1	1	0/11
ase 4							
ENGINE		CAN CIRC 1		CAN CIRC 3		CAN CIRC 6	CAN CIRC 4
ENGINE ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	_	CAN CIRC 5	CAN CIRC 6	-
ENGINE				CAN CIRC 3 — —	CAN CIRC 5	CANCIRC 6	CAN CIRC 4
ENGINE ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	_	– CANØIRC 5 –	CANCIRC 6 — —	-
ENGINE ABS SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2	_	CAN CIRC 5	CAN CIRC 6 — —	-
ENGINE ABS SMART ENTRANCE	CAN COMM CAN COMM	CAN CIRC 1 CAN CIRC 1	CAN CIRC 2	_ _		-	CAN CIRC 3
ENGINE ABS SMART ENTRANCE ase 5 ENGINE	CAN COMM	CAN CIRC 1	CAN CIRC 2 CANCIRC 2	_			-
ENGINE ABS SMART ENTRANCE ase 5 ENGINE ABS	CAN COMM CAN COMM	CAN CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1	CAN CIRC 2 CANCIRC 2	_ _		-	
ENGINE ABS SMART ENTRANCE ase 5 ENGINE	CAN COMM CAN COMM CAN COMM CAN COMM	CAN CIRC 1 CAN CIRC 1 CAN CIRC 1	CAN CIRC 2 CANCIRC 2	_ _		-	CAN CIRC 3
ENGINE ABS SMART ENTRANCE ase 5 ENGINE ABS	CAN COMM CAN COMM CAN COMM CAN COMM	CAN CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1	CAN CIRC 2 CANCIRC 2	_ _		-	
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ENGINE ABS SMART ENTRANCE ase 5 ENGINE ABS SMART ENTRANCE ase 6	CAN COMM CAN COMM CAN COMM CAN COMM CAN COMM	CAN CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1	CAN CIRC 2 CANCIRC 2				CAN CIRC 3
ENGINE ABS SMART ENTRANCE ase 5 ENGINE ABS SMART ENTRANCE ase 6 ENGINE	CAN COMM CAN COMM CAN COMM CAN COMM CAN COMM	CAN CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1	CAN CIRC 2 CANCIRC 2	_ _	- CAN CIRC 5 -	-	
ENGINE ABS SMART ENTRANCE ase 5 ENGINE ABS SMART ENTRANCE ase 6 ENGINE ABS	CAN COMM CAN COMM CAN COMM CAN COMM CAN COMM CAN COMM CAN COMM	CAN CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1	CAN CIRC 2 CANCIRC 2				CAN CIRC 3
ENGINE ABS SMART ENTRANCE ase 5 ENGINE ABS SMART ENTRANCE ase 6 ENGINE	CAN COMM CAN COMM CAN COMM CAN COMM CAN COMM	CAN CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1	CAN CIRC 2 CANCIRC 2		- CAN CIRC 5 -		CAN CIRC 3
ENGINE ABS SMART ENTRANCE ase 5 ENGINE ABS SMART ENTRANCE ase 6 ENGINE ABS	CAN COMM CAN COMM CAN COMM CAN COMM CAN COMM CAN COMM CAN COMM	CAN CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1	CAN CIRC 2 CANCIRC 2		- CAN CIRC 5 -		CAN CIRC 3
ENGINE ABS SMART ENTRANCE ase 5 ENGINE ABS SMART ENTRANCE ase 6 ENGINE ABS	CAN COMM CAN COMM CAN COMM CAN COMM CAN COMM CAN COMM CAN COMM	CAN CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1	CAN CIRC 2 CANCIRC 2		- CAN CIRC 5 -		CAN CIRC 3
ENGINE ABS SMART ENTRANCE ase 5 ENGINE ABS SMART ENTRANCE ase 6 ENGINE ABS SMART ENTRANCE SMART ENTRANCE	CAN COMM CAN COMM CAN COMM CAN COMM CAN COMM CAN COMM CAN COMM CAN COMM	CAN CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1	CAN CIRC 2 CANCIRC 2		- CAN CIRC 5 -		CAN CIRC 3
ENGINE ABS SMART ENTRANCE ase 5 ENGINE ABS SMART ENTRANCE ase 6 ENGINE ABS SMART ENTRANCE	CAN COMM CAN COMM CAN COMM CAN COMM CAN COMM CAN COMM CAN COMM	CAN CIRC 1 CAN CIRC 1	CAN CIRC 2 CANCIRC 2		- CAN CIRC 5 -		CAN CIRC 3

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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 :
ENGINE	CAN COMM	CAN CIRC 1	_	CAN CIRC 3	_	CANORC 6	CAN CIRC 4
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	_	CAN CIRC 5	_	_
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CANORC 2	_	_	_	CANCIRC
ase 10							
ase 10 ENGINE		CAN CIRC 1		CAN CIRC 3		CAN CIRC 6	
	CAN COMM CAN COMM	CAN CIRC 1 CAN CIRC 1	– CAN CIRC 2	CAN CIRC 3	– CAN CIRC 5	CAN CIRC 6	· –
ENGINE						CAN CIRC 6 — —	· –
ENGINE ABS	CAN COMM	CAN CIRC 1 CAN CIRC 1	CAN CIRC 2	_ _ 		_ 	
ENGINE ABS SMART ENTRANCE ase 11 ENGINE	CAN COMM	CAN CIRC 1 CAN CIRC 1	CAN CIRC 2 CAN CIRC 2	-	CAN CIRC 5 —	-	· –
ENGINE ABS SMART ENTRANCE	CAN COMM CAN COMM	CAN CIRC 1 CAN CIRC 1	CAN CIRC 2	_ _ 	CAN CIRC 5	_ 	CAN CAN

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 <u>LAN-461</u>, <u>"Circuit Check Between ESP/TCS/ABS Control Unit and Steering Angle Sensor"</u>

Case 5:Check Harness between Steering angle sensor and Smart entrance control unit. Refer to <u>LAN-462</u>, "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 <u>LAN-464</u>, "Smart Entrance Control Unit Circuit <u>Check"</u>

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 Α **1. CHECK CONNECTOR** 1. Turn ignition switch OFF. В 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. D OK or NG OK >> GO TO 2. E NG >> Repair terminal or connector. 2. CHECK HARNESS FOR OPEN CIRCUIT F Disconnect ESP/TCS/ABS control unit connector and harness connector B101. 1. Check continuity between ESP/TCS/ABS control unit harness 2. connector B109 terminals 61 (L), 63 (R) and harness connector B101 terminals 5 (L), 16 (R). Harness connector ESP/TCS/ABS 61(L) - 5(L): Continuity should exist. control unit 16 63(R) - 16(R): Continuity should exist. connector 5, 16 Н O CONNECTOR C/UNIT OK or NG 61, 63

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

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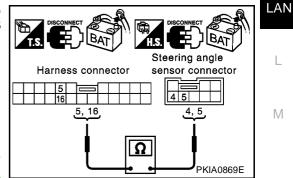
3. CHECK HARNESS FOR OPEN CIRCUIT

- Disconnect steering angle sensor connector. 1.
- 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)16(R) - 5(R)

: Continuity should exist.

: 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 CON-SULT-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.

EKS004ZL

Circuit Check Between Steering Angle Sensor and Smart Entrance Control Unit

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.

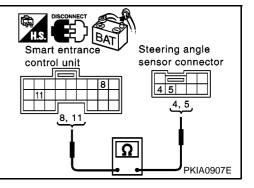
2. CHECK HARNESS FOR OPEN CIRCUIT

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

: 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 CON-SULT-II. Refer to <u>EC-1083</u>, "DTC U1000, U1001 CAN COMMUNICATION LINE" (WITH EURO-OBD) or EC-



<u>1505, "DTC U1000, U1001 CAN COMMUNICATION LINE"</u> (WITHOUT EURO-OBD) for "ENGINE" and Refer to <u>BRC-107, "Inspection 15 CAN Communication Circuit, ESP/TCS/ABS</u> <u>Control Unit and Steering Angle Sensor"</u> for "ABS". Refer to <u>BCS-40, "CAN Communication Line</u> <u>Check"</u> for "SMART ENTRANCE".

NG >> Repair harness.

ECM Circuit Check

1. CHECK CONNECTOR

- 1. Turn ignition switch OFF.
- 2. Disconnect the negative battery terminal.
- 3. Check following terminals and connector for damage, 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.

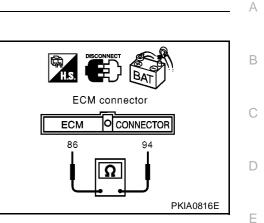


- 1. Disconnect ECM connector.
- 2. Check resistance between ECM harness connector F102 terminals 94(L) and 86(R).
 - 94(L) 86(R)

: 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

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 term

IG >> 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)

OK or NG

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



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. (sensorside and harness-side)

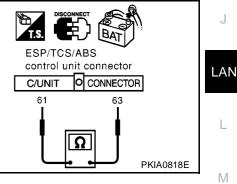
OK or NG

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

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EKS004ZN

$\overline{2}$. CHECK HARNESS FOR OPEN CIRCUIT

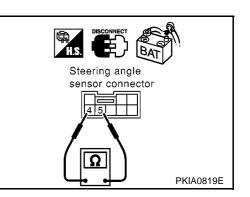
- 1. Disconnect steering angle sensor connector.
- 2. Check resistance between steering angle sensor harness connector M33 terminals 4(L) and 5(R).

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.



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Smart Entrance Control Unit Circuit Check

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

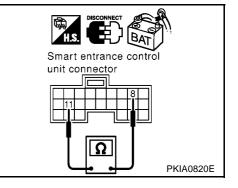
- 1. Disconnect smart entrance control unit connector.
- 2. Check resistance between smart entrance control unit harness connector M41 terminals 8(L) and 11(R).

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.



EKS004ZP

Combination Meter Circuit Check

1. CHECK CONNECTOR

- 1. Turn ignition switch OFF.
- 2. Disconnect the negative battery terminal.
- 3. Check terminals and connector of combination meter for damage, 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

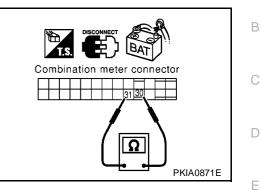
- 1. Disconnect combination meter connector.
- 2. Check resistance between combination meter harness connector M37 terminals 30(L) and 31(R).

30(L) - 31(R)

: Approx. 108 – 132 Ω

OK or NG

- OK >> Replace combination meter.
- NG >> Repair harness between smart entrance control unit and combination meter.



EKS004ZQ

CAN Communication Circuit Check

1. CHECK CONNECTOR

- F 1. Turn ignition switch OFF. 2. Disconnect the negative battery terminal. Check following terminals and connector for damage, bend and loose connection. (meter-side, control 3. unit-side, sensor-side, control module-side and harness-side) Combination meter. Smart entrance control unit. Н 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 LAN Disconnect the following connectors. 1. Combination meter connector. Smart entrance control unit connector. Steering angle sensor connector. Harness connector M87. Μ
- 2. Check continuity between Data link connector M10 terminals 6 (L) and 3(R).

: Continuity should not exist.

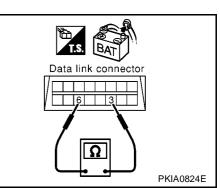
OK or NG

NG

OK >> GO TO 3.

6(L) – 3(R)

- >> 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.



LAN-465

[CAN]

3. CHECK HARNESS FOR SHORT CIRCUIT

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

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

: 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).

: Continuity should not exist.

OK or NG

OK >> GO TO 5.

61(L) - 63(R)

- NG >> • Repair harness between ESP/TCS/ABS control unit and harness connector B101.
 - Repair harness between harness connector B104 and harness connector B101.

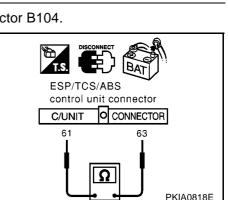
5. CHECK HARNESS FOR SHORT CIRCUIT

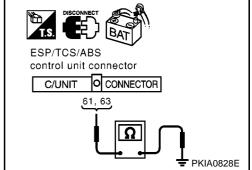
Check continuity between ESP/TCS/ABS control unit harness connector B109 terminals 61 (L), 63 (R) and ground.

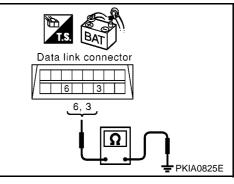
- : Continuity should not exist. : Continuity should not exist.
- 63(R) ground

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.







- 61(L) ground

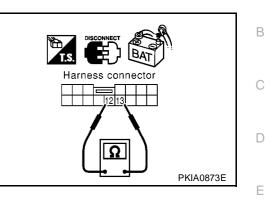
6. CHECK HARNESS FOR SHORT CIRCUIT

- 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.

: 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

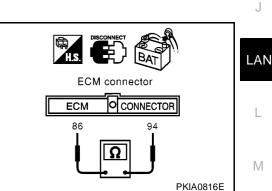
- Disconnect ECM connector. 1.
- Check continuity between ECM harness connector F102 termi-2. nals 94 (L) and 86(R).

94(L) - 86(R)

F31.

OK or NG

OK >> GO TO 9. >> Repair harness between ECM and harness connector NG F31.

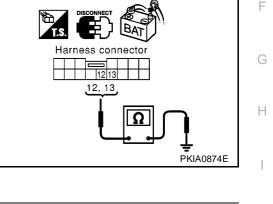


9. CHECK HARNESS FOR SHORT CIRCUIT

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. ECM connector O CONNECTOR ECM OK or NG 86, 94 OK >> GO TO 10. NG >> Repair harness between ECM and harness connector



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10. ECM / COMBINATION METER INTERNAL CIRCUIT INSPECTION

Check components inspection. Refer to <u>LAN-468</u>, "ECM / COMBINATION METER INTERNAL CIRCUIT INSPECTION"

OK or NG

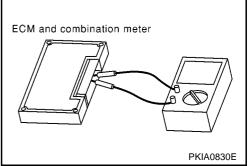
- OK >> Reconnect all connectors to perform "SELF-DIAG RESULTS" and "DATA MONITOR" for "ENGINE", "ABS", and "SMART ENTRANCE" displayed on CONSULT-II. Refer to <u>EC-1083, "DTC</u> <u>U1000, U1001 CAN COMMUNICATION LINE"</u> (WITH EURO-OBD) or <u>EC-1505, "DTC U1000,</u> <u>U1001 CAN COMMUNICATION LINE"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

Component Inspection ECM / COMBINATION METER INTERNAL CIRCUIT INSPECTION

EKS004ZR

- Remove ECM and Combination meter from vehicle.
- Check resistance between ECM terminals 94 and 86.
- Check resistance between Combination meter terminals 30 and 31.

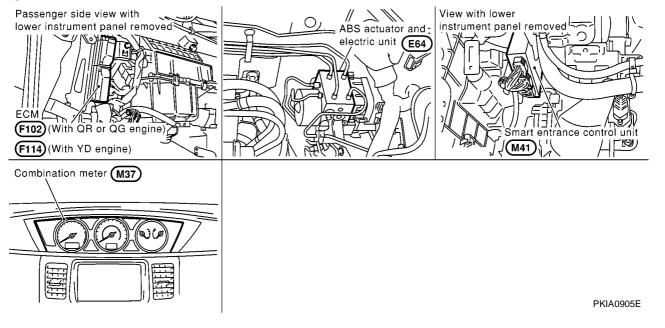
Unit	Terminal	Resistance value (Ω)
ECM	94 - 86	Approx. 108 - 132
Combination meter	30 – 31	Applox. 100 - 132



System Description

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

Component Parts and Harness Connector Location



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EKS004Z6

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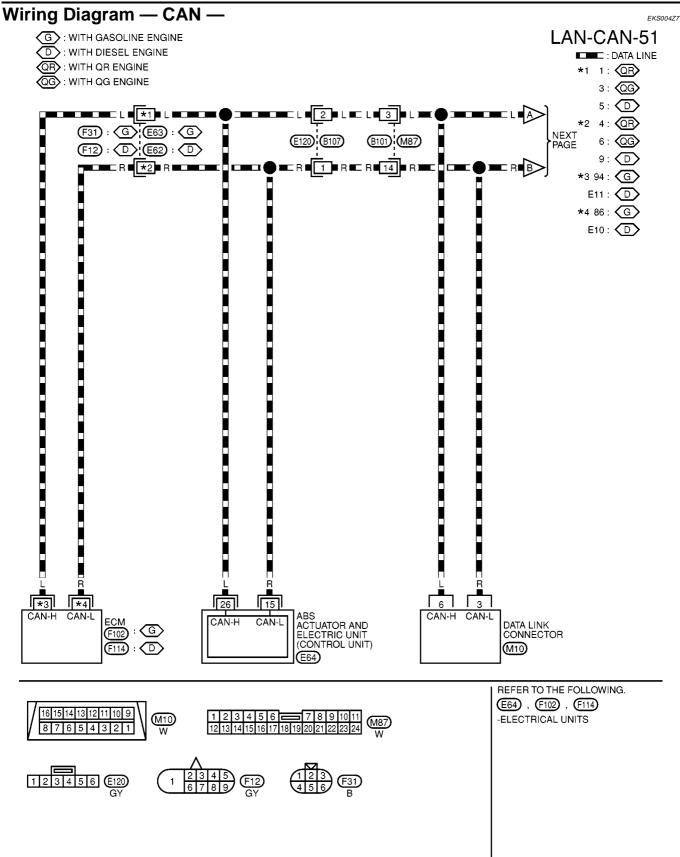
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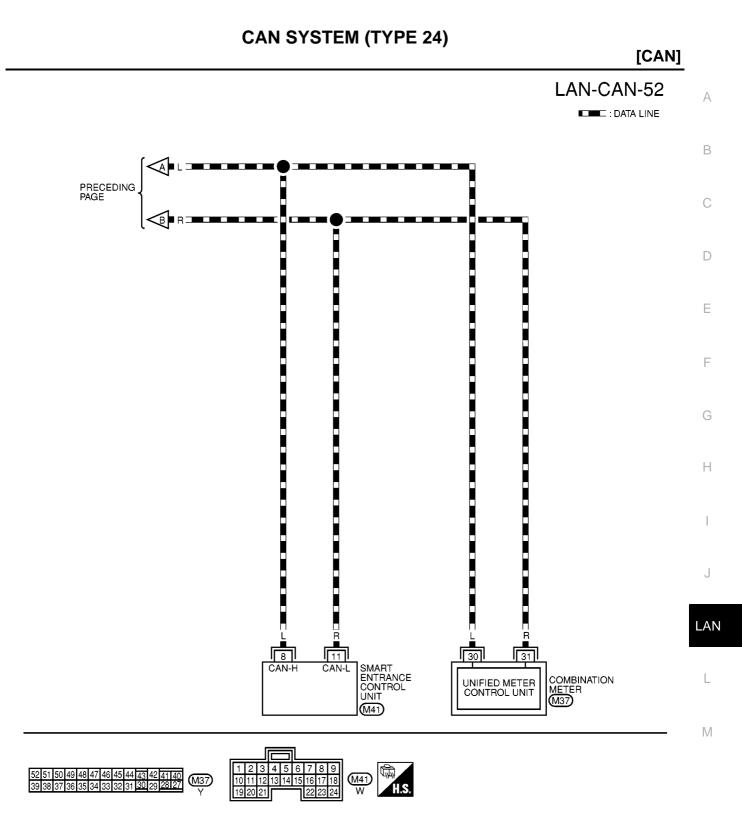
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Work Flow

- EKS004Z8
- Print all the data of "SELF-DIAG RESULTS" and "DATA MONITOR" for "ENGINE", "ABS", and "SMART ENTRANCE" displayed on CONSULT-II. Refer to <u>EC-150</u>, "<u>DTC U1000</u>, <u>U1001 CAN COMMUNICATION</u> <u>LINE"</u> (QG ENGINE MODELS WITH EURO-OBD), <u>EC-663</u>, "<u>DTC U1000</u>, <u>U1001 CAN COMMUNICA-TION LINE"</u> (QG ENGINE MODELS WITHOUT EURO-OBD), <u>EC-1083</u>, "<u>DTC U1000</u>, <u>U1001 CAN</u> <u>COMMUNICATION LINE"</u> (QR ENGINE MODELS WITH EURO-OBD), <u>EC-1505</u>, "<u>DTC U1000</u>, <u>U1001</u> <u>CAN COMMUNICATION LINE"</u> (QR ENGINE MODELS WITH EURO-OBD), <u>EC-1505</u>, "<u>DTC U1000</u>, <u>U1001</u> <u>U1000 CAN COMMUNICATION LINE"</u> (YD ENGINE MODELS WITHOUT EURO-OBD) or <u>EC-1790</u>, "<u>DTC</u> <u>U1000 CAN COMMUNICATION LINE"</u> (YD ENGINE MODELS) for "ENGINE" and Refer to <u>BRC-33</u>, "<u>CAN Communication Circuit</u>" for "ABS". Refer to <u>BCS-40</u>, "<u>CAN Communication Line Check</u>" 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"
- Based on the data monitor results, put "v" marks onto the items with "UNKWN" or "NG" in the check sheet table. Refer to <u>LAN-473, "CHECK SHEET"</u>

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 <u>LAN-474, "CHECK SHEET</u> <u>RESULTS (EXAMPLE)"</u>

CHECK SHEET

ENGINE CAN COMM CAN CIRC 1 - - - CAN CIRC ABS ABS CAN COMM CAN CIRC 1 CAN CIRC 2 - CAN CIRC 1 CAN CIRC 1 CAN CIRC 2 - - - CAN CIR CAN CIRC 1 CAN CIRC 2 - - CAN CIR CAN CIRC 1 CAN CIRC 1 CAN CIRC 2 - - CAN CIRC 1 CAN CIRC 1 CAN CIRC 2 - - CAN CIRC 1 CAN CIR CIRC 1 CAN CIRC 1 <
SMART ENTRANCE CAN COMM CAN CIRC 1 CAN CIRC 2 - - CAN CIR ymptoms:
Attach copy of Attach copy of Attach copy of SMART ENTRANCE
ENGINE ABS SMART ENTRANCE
Attach copy of ENGINE DATA MONITOR Attach copy of Attach copy of ABS DATA MONITOR ABS DATA MONITOR ATtach copy of SMART ENTRANCE DATA MONITOR

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CHECK SHEET RESULTS (EXAMPLE)

ENGINE	CANCOMM	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		_	_	CANORC 4
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	_	_	
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2	_	-	CAN CIRC 3
ase 2: Replace ABS actu ENGINE	ator and electric unit CAN COMM	(control unit) CAN CIRC 1			1	CAN CIRC 4
ABS		CAN CIRC 1	CAN CIRC 2			
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2			CAN CIRC 3
		OAN OING T	OAN OINO 2		1	
ENGINE	CAN COMM	CAN CIRC 1	_	_	_	CAN CIRC 4
ABS	CAN COMM	CAN CIRC 1	CANORC 2	_	_	_
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2	-	_	CAN CIRC 3
ase 3: Replace Smart ent ENGINE ABS	Trance control unit	CAN CIRC 1 CAN CIRC 1 CAN CIRC 1	– CAN CIRC 2 CAN CIRC 2		- - -	CAN CIRC 4 — CAN CIRC 3
SMART ENTRANCE						
	· · · · ·		I		T	
ENGINE	CAN COMM	CAN CIRC 1		-	_	CAN CIRC 4
ENGINE ABS SMART ENTRANCE	· · · · ·		CAN CIRC 2 CAN O RC 2		- - -	CAN CIRC 4
ENGINE ABS SMART ENTRANCE ase 4 ENGINE ABS	CAN COMM CAN COMM CAN COMM CAN COMM CAN COMM	CAN CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1	CAN (RC 2)			CANORC 3
ENGINE ABS SMART ENTRANCE ase 4 ENGINE ABS SMART ENTRANCE	CAN COMM CAN COMM CAN COMM CAN COMM	CAN CIRC 1 CAN CIRC 1 CAN CIRC 1	CAN V RC 2		· _ · _ · _ · _ · _ · _ · _ · _ · _ ·	CAN CAN
ENGINE ABS SMART ENTRANCE ase 4 ENGINE ABS SMART ENTRANCE	CAN COMM CAN COMM CAN COMM CAN COMM CAN COMM CAN COMM	CAN CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1	CAN (RC 2)		· _ · _ · _ · _ · _ · _ · _ · _ · _ ·	CANORC 3
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ENGINE ABS SMART ENTRANCE ase 4 ENGINE ABS	CAN COMM CAN COMM CAN COMM CAN COMM CAN COMM CAN COMM	CAN CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1 CAN CIRC 1	CAN V RC 2		· _ · _ · _ · _ · _ · _ · _ · _ · _ ·	CANORC 3
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ENGINE ABS SMART ENTRANCE SMART ENTRANCE ABS SMART ENTRANCE ABS SMART ENTRANCE ABS SMART ENTRANCE ABS SMART ENTRANCE	CAN COMM CAN COMM CAN COMM CAN COMM CAN COMM CAN COMM CAN COMM CAN COMM CAN COMM	CAN CIRC 1 CAN CIRC 1	CAN VARC 2		· _ · _ · _ · _ · _ · _ · _ · _ · _ ·	
ENGINE ABS SMART ENTRANCE ABS SMART ENTRANCE ABS SMART ENTRANCE ABS SMART ENTRANCE ABS SMART ENTRANCE	CAN COMM CAN COMM CAN COMM CAN COMM CAN COMM CAN COMM CAN COMM CAN COMM CAN COMM	CAN CIRC 1 CAN CIRC 1	CAN ⊘ RC 2 CAN CIRC 2 CAN ⊘ RC 2		· _ · _ · _ · _ · _ · _ · _ · _ · _ ·	CANORC 4 CANORC 4 CANORC 4 CAN CIRC 3 CAN CIRC 3 CAN CIRC 3 CAN CIRC 4 CAN CIRC 4
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ENGINE ABS SMART ENTRANCE ABS SMART ENTRANCE ABS SMART ENTRANCE ABS SMART ENTRANCE ABS SMART ENTRANCE ABS SMART ENTRANCE	CAN COMM CAN COMM CAN COMM CAN COMM CAN COMM CAN COMM CAN COMM CAN COMM CAN COMM	CAN CIRC 1 CAN CIRC 1	CAN ⊘ RC 2 CAN CIRC 2 CAN ⊘ RC 2		· _ · _ · _ · _ · _ · _ · _ · _ · _ ·	CANORC 4 CANORC 4 CANORC 4 CAN CIRC 3 CAN CIRC 3 CAN CIRC 3 CAN CIRC 4 CAN CIRC 4
ENGINE ABS SMART ENTRANCE ABS SMART ENTRANCE ABS SMART ENTRANCE ABS SMART ENTRANCE ABS SMART ENTRANCE ABS SMART ENTRANCE ABS SMART ENTRANCE	CAN COMM CAN COMM CAN COMM CAN COMM CAN COMM CAN COMM CAN COMM CAN COMM CAN COMM	CAN CIRC 1 CAN CIRC 1	CAN VARC 2			CANORC 4 CANORC 4 CANORC 4 CANCIRC 3 CANCIRC 3 CANCIRC 3 CANCIRC 4 CANCIRC 4 CANCIRC 3

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ENGINE	CAN COMM	CAN CIRC 1	-	-	-	CANORC 4
ABS	CAN COMM	CAN CIRC 1	CAN CIRC 2	_	-	-
SMART ENTRANCE	CAN COMM	CAN CIRC 1	CAN CIRC 2	_	_	CANORC 3
ase 9						
ENGINE	CAN COMM	CAN CIRC 1	-	_	—	CANORC 4
ABS	CAN COMM	CAN CIRC 1	CANORC 2	_	_	-
SMART ENTRANCE	CAN COMM	CANOIRC 1	CANORC 2	_	_	CANORC 3
						PKIA0810E
E: ≌ is displayed on	"CAN COMM	" for the diagr	nosed control u	nit, replace t	the control u	
	"CAN COMM	" for the diagr	nosed control u	nit, replace t	the control u	
" is displayed on	osis according			-	the control u	

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С 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 J 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.

- Disconnect the negative battery terminal. 2.
- 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.
- 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)

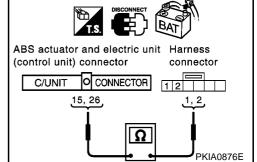
: Continuity should exist.

- 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.
- Check continuity between harness connector B107 terminals 2 (L), 1 (R) and harness connector B101 terminals 3 (L), 14 (R).
 - 2(L) 3(L)
 - 1(R) 14(R)
- : Continuity should exist.

: Continuity should exist.

OK or NG

OK	>> GO TO 4.
NG	>> Repair harness.

Harness connector 1, 2 4, 4 4, 4,

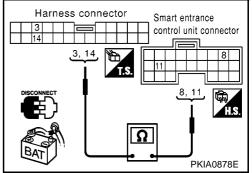
4. CHECK HARNESS FOR OPEN CIRCUIT

- 1. Disconnect smart entrance control unit connector.
- 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) 14(R) – 11(R)

: Continuity should exist. : Continuity should exist.

OK or NG

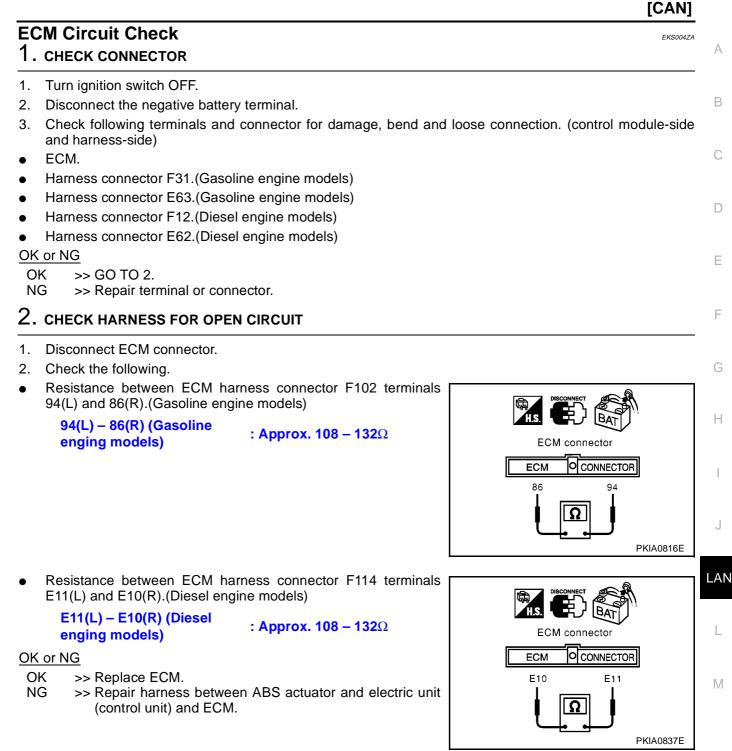
OK >> Reconnect all connectors to perform "SELF-DIAG RESULTS" and "DATA MONITOR" for "ENGINE", "ABS", and "SMART ENTRANCE" displayed on CON-SULT-II. Refer to <u>EC-150</u>, "<u>DTC U1000</u>, <u>U1001 CAN</u> <u>COMMUNICATION LINE</u>" (QG ENGINE MODELS



WITH EURO-OBD), <u>EC-663</u>, "DTC U1000, U1001 CAN COMMUNICATION LINE" (QG ENGINE MODELS WITHOUT EURO-OBD), <u>EC-1083</u>, "DTC U1000, U1001 CAN COMMUNICATION LINE" (QR ENGINE MODELS WITH EURO-OBD), <u>EC-1505</u>, "DTC U1000, U1001 CAN COM-MUNICATION LINE" (QR ENGINE MODELS WITHOUT EURO-OBD) or <u>EC-1790</u>, "DTC U1000 CAN COMMUNICATION LINE" (YD ENGINE MODELS) for "ENGINE" and Refer to <u>BRC-33</u>, "CAN Communication Circuit" for "ABS". Refer to <u>BCS-40</u>, "CAN Communication Line Check" for "SMART ENTRANCE".

NG >> Repair harness.

EKS004ZB



ABS Actuator and Electric Unit (control unit) Circuit Check 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.

LAN-477

$\overline{2}$. CHECK HARNESS FOR OPEN CIRCUIT

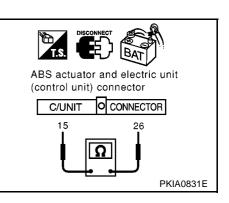
- 1. Disconnect ABS actuator and electric unit (control unit) connector.
- 2. Check resistance between ABS actuator and electric unit (control unit) harness connector E64 terminals 26(L) and 15(R).

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).



EKS004ZC

Smart Entrance Control Unit Circuit Check

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

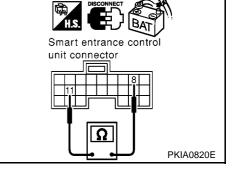
- 1. Disconnect smart entrance control unit connector.
- 2. Check resistance between smart entrance control unit harness connector M41 terminals 8(L) and 11(R).

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.



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Combination Meter Circuit Check

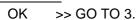
1. CHECK CONNECTOR

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

OK or NG

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

Check following terminals and connector for damage, bend and loose connection. (meter-side, control



OK or NG

6(L) - 3(R)

- 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.

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)

1. CHECK CONNECTOR

Combination meter.

Smart entrance control unit.

Turn ignition switch OFF.

: Approx. 108 – 132Ω

OK or NG

1. 2.

3.

OK >> Replace combination meter.

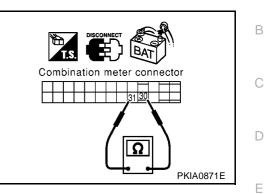
CAN Communication Circuit Check

Disconnect the negative battery terminal.

unit-side, control module-side and harness-side)

ABS actuator and electric unit (control unit).

NG >> Repair harness between smart entrance control unit and combination meter.



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OK or NG

ECM.

OK >> GO TO 2.

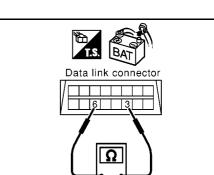
NG >> Repair terminal or connector.

2. CHECK HARNESS FOR SHORT CIRCUIT

Between Data link connector and ECM.

- 1. Disconnect the following connectors.
- Combination meter connector.
- Smart entrance control unit connector.
- Harness connector M87.
- Check continuity between Data link connector M10 terminals 6 (L) and 3(R).

: Continuity should not exist.



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3. CHECK HARNESS FOR SHORT CIRCUIT

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

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

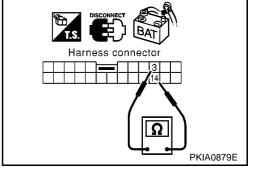
4. CHECK HARNESS FOR SHORT CIRCUIT

- 1. Disconnect harness connector B107.
- Check continuity between harness connector B101 terminals 3 (L) and 14(R).
 - 3(L) 14(R)

: Continuity should not exist.

OK or NG

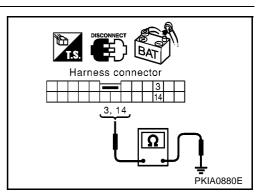
- OK >> GO TO 5.
- NG >> Repair harness between harness connector B101 and harness connector B107.

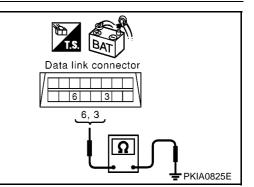


5. CHECK HARNESS FOR SHORT CIRCUIT

Check continuity between harness connector B101 terminals 3 (L), 14(R) and ground.

- 3(L) ground
- : Continuity should not exist. : Continuity should not exist.
- 14(R) ground
- OK or NG
- OK >> GO TO 6.
- NG >> Repair harness between harness connector B101 and harness connector B107.





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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

NG

OK >> GO TO 7.

- >> 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)

: Continuity should not exist.

: Continuity should not exist.

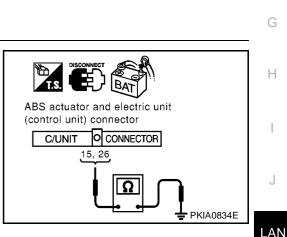
/. CHECK HARNESS FOR SHORT CIRCUIT

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

- 26(L) ground
- 15(R) ground

OK or NG

- OK >> GO TO 8. NG >> • Repair h
 - >> 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)



ABS actuator and electric unit (control unit) connector

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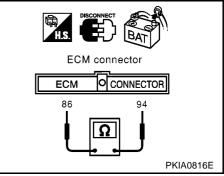
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8. CHECK HARNESS FOR SHORT CIRCUIT

- 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.



ECM connector

ECM

E10

CONNECTOR

E11

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

E11(L) - E10(R) (Die-: Continuity should not exist. sel enging models)

OK or NG

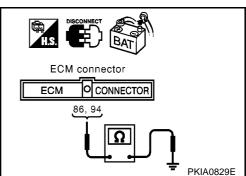
OK >> GO TO 9. NG

- >> 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

- Check the following. 1.
- Continuity between ECM harness connector F102 terminals 94 (L), 86 (R) and ground (Gasoline engine models)

94(L) - ground (Gaso-: Continuity should not exist. line enging models) 86(R) - ground (Gas-: Continuity should not exist. oline enging models)

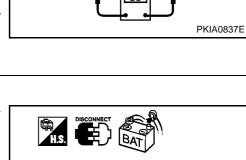


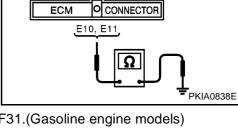
Continuity between ECM harness connector F114 terminals E11 (L), E10 (R) and ground. (Diesel engine models)

E11(L) – ground (Diesel enging mod-: Continuity should not exist. els) E10(R) – ground (Diesel enging mod-: Continuity should not exist. els)

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)





ECM connector

ECM

LAN-482

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10. ECM / COMBINATION METER INTERNAL CIRCUIT INSPECTION

Check components inspection. Refer to <u>LAN-483</u>, "ECM / COMBINATION METER INTERNAL CIRCUIT INSPECTION"

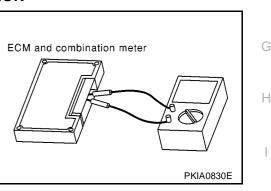
OK or NG

- OK >> Reconnect all connectors to perform "SELF-DIAG RESULTS" and "DATA MONITOR" for "ENGINE", "ABS", and "SMART ENTRANCE" displayed on CONSULT-II. Refer to <u>EC-150</u>, "DTC <u>U1000, U1001 CAN COMMUNICATION LINE"</u> (QG ENGINE MODELS WITH EURO-OBD), <u>EC-663</u>, "DTC U1000, U1001 CAN COMMUNICATION LINE" (QG ENGINE MODELS WITHOUT EURO-OBD), <u>EC-1083</u>, "DTC U1000, U1001 CAN COMMUNICATION LINE" (QR ENGINE MODELS WITH EURO-OBD), <u>EC-1505</u>, "DTC U1000, U1001 CAN COMMUNICATION LINE" (QR ENGINE MODELS WITHOUT EURO-OBD) or <u>EC-1790</u>, "DTC U1000 CAN COMMUNICA- TION LINE" (YD ENGINE MODELS) for "ENGINE" and Refer to <u>BRC-33</u>, "CAN Communication <u>Circuit</u>" for "ABS". Refer to <u>BCS-40</u>, "CAN Communication Line Check" for "SMART ENTRANCE".
- NG >> Replace ECM and/or Combination meter.

Component Inspection 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	
ECM (Diesel engine models)	E11 – E10	Approx. 108 - 132
Combination meter	30 – 31	



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