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2001 FORD Focus Wagon OEM Service and Repair Workshop Manual

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H7 CHECK THE SENSOR FOR A SHORT TO VREF OR SIGNAL RETURN CIRCUITS

- Measure:

Positive Lead	Measurement / Action	Negative Lead
C4009-2	Ω	C4009-1
C4009-2	Ω	C4009-3

Are the resistances greater than 10,000 ohms?

Yes	GO to H8

No	REPAIR the affected circuits.

H8 CHECK THE SENSOR CIRCUITS FOR AN OPEN

- Ignition OFF.
- Measure:

Positive Lead	Measurement / Action	Negative Lead
C4009-1	Ω	C242A-15
C4009-2	Ω	C242A-17
C4009-3	Ω	C242A-4

Yes	CHECK OASIS (Online Automotive Service Information System) for any applicable service articles: TSB (Technical Service Bulletin) , GSB (General Service Bulletin) , SSM (special service message) or FSA (Field Service Action) . If a service article exists for this concern, DISCONTINUE this test and FOLLOW the service article instructions. If no service articles address this concern, INSTALL a new IPMA (image processing module A) . REFER to: Image Processing Module A (IPMA) (419-07 Lane Keeping System, Removal and Installation).

No	The system is operating correctly at this time. The concern may have been caused by a loose or corroded connector. ADDRESS the root cause of any connector or pin issues.

PINPOINT TEST I : B1B50:08

NOTE

Before disconnecting the IPMA (image processing module A) or any of the parking aid sensors, verify the connectors are properly seated and latched.

Refer to Wiring Diagrams Cell 145for schematic and connector information.

Normal Operation and Fault Conditions REFER to: Parking Aid - System Operation and Component Description
(413-13A Parking Aid - Vehicles With: Rear Parking Aid, Description and Operation).

DTC Fault Trigger Conditions

DTC (diagnostic trouble code)	Description	Fault Trigger Condition
IPMA (image processing module A) B1B50:08	Left Rear Inner Sensor: Bus Signal/Message Failures	A continuous and on-demand DTC (diagnostic trouble code) that sets in the IPMA (image processing module A) when there is a message failure on the LIN (local interconnect network) for the LHR (left-hand rear) inner parking aid sensor.

Possible Sources

- Wiring, terminals or connectors
- LHR (left-hand rear) inner parking aid sensor

C4010-1	V	Ground

Is the voltage greater than 9 volts?

Yes	GO to I4

No	REPAIR the circuit.

I4 CHECK FOR GROUND AT THE SENSOR

- Measure:

Positive Lead	Measurement / Action	Negative Lead
C4010-1	V	C4010-3

Is the voltage greater than 9 volts?

Yes	GO to I5

No	REPAIR the circuit.

I5 CHECK THE SENSOR FOR A SHORT TO POWER

- Disconnect IPMA (image processing module A) C242A .
- Ignition ON.
- Measure:

Positive Lead	Measurement / Action	Negative Lead

C4010-2	Ω	C4010-3

Are the resistances greater than 10,000 ohms?

Yes	GO to I8

No	REPAIR the affected circuits.

I8 CHECK THE SENSOR CIRCUITS FOR AN OPEN

- Ignition OFF.
- Measure:

Positive Lead	Measurement / Action	Negative Lead
C4010-1	Ω	C242A-15
C4010-2	Ω	C242A-16
C4010-3	Ω	C242A-4

Are the resistances less than 3 ohms?

Yes	GO to I9

No	REPAIR the affected circuit.

No	The system is operating correctly at this time. The concern may have been caused by a loose or corroded connector. ADDRESS the root cause of any connector or pin issues.

PINPOINT TEST J : B1B36:08

NOTE

Before disconnecting the IPMA (image processing module A) or any of the parking aid sensors, verify the connectors are properly seated and latched.

Refer to Wiring Diagrams Cell 145for schematic and connector information.

Normal Operation and Fault Conditions REFER to: Parking Aid - System Operation and Component Description
(413-13A Parking Aid - Vehicles With: Rear Parking Aid, Description and Operation).

DTC Fault Trigger Conditions

DTC (diagnostic trouble code)	Description	Fault Trigger Condition
IPMA (image processing module A) B1B36:08	Right Front Outer Sensor: Bus Signal/Message Failures	A continuous and on-demand DTC (diagnostic trouble code) that sets in the IPMA (image processing module A) when there is a message failure on the LIN (local interconnect network) for the RHF (right-hand front) outer parking aid sensor.

Possible Sources

- Wiring, terminals or connectors
- RHF (right-hand front) outer parking aid sensor
- IPMA (image processing module A)

J1 CHECK THE DIAGNOSTIC TROUBLE CODES (DTCS) FROM THE IPMA (IMAGE PROCESSING MODULE A) SELF-TEST

- Ignition ON.
- Using a diagnostic scan tool, carry out the IPMA (image processing module A) self-test.
- Check the parking aid Diagnostic Trouble Codes (DTCs) from the self-test.

Are Diagnostic Trouble Codes (DTCs) for multiple front parking aid sensors recorded?

- Ignition OFF.
- Disconnect RHF (right-hand front) outer parking aid sensor C1431 .
- Ignition ON.
- Measure:

Positive Lead	Measurement / Action	Negative Lead
C1431-1	V	Ground

Is the voltage greater than 9 volts?

Yes	GO to J4

No	REPAIR the circuit.

J4 CHECK FOR GROUND AT THE SENSOR

- Measure:

Positive Lead	Measurement / Action	Negative Lead
C1431-1	V	C1431-3

Is the voltage greater than 9 volts?

Yes	GO to J5

No	REPAIR the circuit.

J5 CHECK THE SENSOR FOR A SHORT TO POWER

- Measure:

Positive Lead	Measurement / Action	Negative Lead
C1431-2	Ω	C1431-1
C1431-2	Ω	C1431-3

Are the resistances greater than 10,000 ohms?

Yes	GO to J8

No	REPAIR the affected circuits.

J8 CHECK THE SENSOR CIRCUITS FOR AN OPEN

- Ignition OFF.
- Measure:

Positive Lead	Measurement / Action	Negative Lead
C1431-1	Ω	C242A-22
C1431-2	Ω	C242A-10
C1431-3	Ω	C242A-11

Are the resistances less than 3 ohms?

	FSA (Field Service Action) . If a service article exists for this concern, DISCONTINUE this test and FOLLOW the service article instructions. If no service articles address this concern, INSTALL a new IPMA (image processing module A) . REFER to: Image Processing Module A (IPMA) (419-07 Lane Keeping System, Removal and Installation).

No	The system is operating correctly at this time. The concern may have been caused by a loose or corroded connector. ADDRESS the root cause of any connector or pin issues.

PINPOINT TEST K : B1B38:08

NOTE

Before disconnecting the IPMA (image processing module A) or any of the parking aid sensors, verify the connectors are properly seated and latched.

Refer to Wiring Diagrams Cell 145for schematic and connector information.

Normal Operation and Fault Conditions REFER to: Parking Aid - System Operation and Component Description
(413-13A Parking Aid - Vehicles With: Rear Parking Aid, Description and Operation).

DTC Fault Trigger Conditions

DTC (diagnostic trouble code)	Description	Fault Trigger Condition
IPMA (image processing module A) B1B38:08	Right Front Inner Sensor: Bus Signal/Message Failures	A continuous and on-demand DTC (diagnostic trouble code) that sets in the IPMA (image processing module A) when there is a message failure on the LIN (local interconnect network) for the RHF (right-hand front) inner parking aid sensor.

Possible Sources

- Wiring, terminals or connectors
- RHF (right-hand front) inner parking aid sensor
- IPMA (image processing module A)

Is the voltage greater than 9 volts?

Yes	GO to K4

No	REPAIR the circuit.

K4 CHECK FOR GROUND AT THE SENSOR

- Measure:

Positive Lead	Measurement / Action	Negative Lead
C1430-1	V	C1430-3

Is the voltage greater than 9 volts?

Yes	GO to K5

No	REPAIR the circuit.

K5 CHECK THE SENSOR FOR A SHORT TO POWER

- Disconnect IPMA (image processing module A) C242A .
- Ignition ON.
- Measure:

Positive Lead	Measurement / Action	Negative Lead
C1430-2	V	Ground

Is any voltage present?