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1994 FORD Fiesta 5 Doors OEM Service and Repair Workshop Manual

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	FOLLOW the service article instructions. If no service articles address this concern, INSTALL a new HCM (headlamp control module) . REFER to: Headlamp Control Module (HCM) (417-01 Exterior Lighting, Removal and Installation).

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

PINPOINT TEST S : U023A:87

Normal Operation and Fault Conditions

REFER to: Exterior Lighting - Overview(417-01 Exterior Lighting, Description and Operation).

REFER to: Exterior Lighting - System Operation and Component Description

(417-01 Exterior Lighting, Description and Operation).

DTC Fault Trigger Conditions

DTC (diagnostic trouble code)	Description	Fault Trigger Condition
HCM (headlamp control module) Continuous U023A:87	Lost Communication With Image Processing Module A: Missing Message	A continuous memory DTC (diagnostic trouble code) that sets when the HCM (headlamp control module) if messages received from the IPMA (image processing module A) are missing.

Possible Sources

- Communication concern
- IPMA (image processing module A)
- HCM (headlamp control module)

S1 VERIFY THE CUSTOMER CONCERN

- Ignition ON.
- Verify that there is an observable symptom present.

Is an observable symptom present?

Yes	GO to S2

Yes	GO to S5

No	The system is operating correctly at this time. The DTC (diagnostic trouble code) may have been set due to high network traffic or an intermittent fault condition.

S5 CHECK FOR DTC (DIAGNOSTIC TROUBLE CODE) U023A:87 SET IN OTHER MODULES

- Using a diagnostic scan tool, clear all Diagnostic Trouble Codes (DTCs).
- Ignition OFF.
- Ignition ON.
- Using a diagnostic scan tool, perform the self-test.
- Retrieve the Diagnostic Trouble Codes (DTCs) from all modules.

Is DTC (diagnostic trouble code) U023A:87 set in any other module?

Yes	INSTALL a new IPMA (image processing module A) . REFER to: Image Processing Module A (IPMA) (419-07 Lane Keeping System, Removal and Installation).

No	GO to S6

S6 CHECK THE HCM (HEADLAMP CONTROL MODULE) PROGRAMMING

- Using a diagnostic scan tool, complete the PMI (programmable module installation) process for the HCM (headlamp control module) following the on-screen instructions.
- REPEAT the HCM (headlamp control module) self-test.

Does any Diagnostic Trouble Codes (DTCs) return?

Yes	GO to S7

No	The system is operating correctly at this time. The concern may was caused by the HCM (headlamp control module) programming.

Module A) B14E5:56	Invalid/Incompatible Configuration	(Lighting Driver Control Module A) detects that the configuration is not correct.
LDCMA (Lighting Driver Control Module A) B14E5:96	Left Front Enhanced Exterior Lighting System: Component Internal Failure	A continuous memory and on-demand DTC (diagnostic trouble code) that sets when the LDCMA (Lighting Driver Control Module A) detects an internal error.
LDCMA (Lighting Driver Control Module A) U0273:00	Lost Communication With Lighting Driver Control Module 'A': No Sub Type Information	A continuous memory and on-demand DTC (diagnostic trouble code) that sets when the LDCMA (Lighting Driver Control Module A) lost communication with the LH (left-hand) headlamp internal LED (light emitting diode) controller.
LDCMA (Lighting Driver Control Module A) U3003:16	Battery Voltage: Circuit Voltage Below Threshold	A continuous memory and on-demand DTC (diagnostic trouble code) that sets when the LDCMA (Lighting Driver Control Module A) detects voltage lower than 10 volts on the LDCMA (Lighting Driver Control Module A) voltage supply circuit.
LDCMA (Lighting Driver Control Module A) U3003:17	Battery Voltage: Circuit Voltage Above Threshold	A continuous memory and on-demand DTC (diagnostic trouble code) that sets when the LDCMA (Lighting Driver Control Module A) detects voltage greater than 15.5 volts on the LDCMA (Lighting Driver Control Module A) voltage supply circuit.
LDCMA (Lighting Driver Control Module A) U3003:A2	Battery Voltage: System Voltage Low	A continuous memory and on-demand DTC (diagnostic trouble code) that sets when the LDCMA (Lighting Driver Control Module A) detects voltage lower than 16 volts on the LDCMA (Lighting Driver Control Module A) voltage supply circuit.
LDCMA (Lighting Driver Control Module A) U3003:A3	Battery Voltage: System Voltage High	A continuous memory and on-demand DTC (diagnostic trouble code) that sets when the LDCMA (Lighting Driver Control Module A) detects voltage greater than 20.5 volts on the LDCMA (Lighting Driver Control Module A) voltage supply circuit.
LDCMB (Lighting Driver Control	Right Front Enhanced Exterior Lighting System:	A continuous memory and on-demand DTC (diagnostic trouble code) that sets when the LDCMB

- LDCMB (Lighting Driver Control Module B)

Visual Inspection and Pre-checks

- Inspect the headlamp for damage.

T1 CHECK FOR ANY OTHER DIAGNOSTIC TROUBLE CODES (DTCS)

- Using a diagnostic scan tool, retrieve all Continuous Memory Diagnostic Trouble Codes (CMDTCs).

Are any charging system Diagnostic Trouble Codes (DTCs) recorded?

Yes	Diagnose the other Diagnostic Trouble Codes (DTCs) first. REFER to the Master DTC (diagnostic trouble code) Chart (All-Inclusive).

No	VERIFY the BCMC (body control module C) (also known as the BJB (battery junction box)) fuse 100 (25A) (LH (left-hand) headlamp) or fuse 101 (25A) (RH (right-hand) headlamp) is OK. If OK, GO to T2 If not OK, REFER to the Wiring Diagrams manual to identify the possible causes of the circuit short.

T2 CHECK THE HEADLAMP MOUNTED LDCM (LIGHTING DRIVER CONTROL MODULE) PROGRAMMING

- Place the headlamp switch in the OFF positions.
- Using a diagnostic scan tool, complete the PMI (programmable module installation) process for the LDCMA (Lighting Driver Control Module A) (LH (left-hand) headlamp) or for the LDCMB (Lighting Driver Control Module B) (RH (right-hand) headlamp) following the on-screen instructions.
- Place the headlamp switch in the HEADLAMPS positions.
- Raise the front of the vehicle by the frame slightly, then lower the vehicle to it's normal height.
- REPEAT the LDCMA (Lighting Driver Control Module A) or LDCMB (Lighting Driver Control Module B) self-test.

Is the concern still present or does any Diagnostic Trouble Codes (DTCs) return?

Yes	GO to T3

No	The system is operating correctly at this time. The concern may was caused by the LDCM (Lighting Driver Control Module) .

T3 CHECK THE HEADLAMP MOUNTED LDCM (LIGHTING DRIVER CONTROL MODULE)

LDCMA (Lighting Driver Control Module A) U2100:00	Initial Configuration Not Complete: No Sub Type Information	A continuous memory and on-demand DTC (diagnostic trouble code) that sets when the LDCMA (Lighting Driver Control Module A) detects that the initial configuration was not completed.
LDCMA (Lighting Driver Control Module A) U3000:45	Control Module: Program Memory Failure	A continuous memory and on-demand DTC (diagnostic trouble code) that sets when the LDCMA (Lighting Driver Control Module A) detects an internal error.
LDCMB (Lighting Driver Control Module B) U2100:00	Initial Configuration Not Complete: No Sub Type Information	A continuous memory and on-demand DTC (diagnostic trouble code) that sets when the LDCMB (Lighting Driver Control Module B) detects that the initial configuration was not completed.
LDCMB (Lighting Driver Control Module B) U3000:45	Control Module: Program Memory Failure	A continuous memory and on-demand DTC (diagnostic trouble code) that sets when the LDCMB (Lighting Driver Control Module B) detects an internal error.

Possible Sources

- LDCMA (Lighting Driver Control Module A)
- LDCMB (Lighting Driver Control Module B)

U1 CHECK THE HEADLAMP MOUNTED LDCM (LIGHTING DRIVER CONTROL MODULE) PROGRAMMING

- Place the headlamp switch in the OFF positions.
- Using a diagnostic scan tool, complete the PMI (programmable module installation) process for the LDCMA (Lighting Driver Control Module A) (LH (left-hand) headlamp) or for the LDCMB (Lighting Driver Control Module B) (RH (right-hand) headlamp) following the on-screen instructions.
- Place the headlamp switch in the HEADLAMPS positions.
- Raise the front of the vehicle by the frame slightly, then lower the vehicle to it's normal height.
- REPEAT the LDCMA (Lighting Driver Control Module A) or LDCMB (Lighting Driver Control Module B) self-test.

Is the concern still present or does any Diagnostic Trouble Codes (DTCs) return?

Yes	GO to U2

C1509-3	V	C1509-2
C1509-3	V	C1509-4

RH (right-hand) Headlamp

Positive Lead	Measurement / Action	Negative Lead
C1510-3	V	C1510-2
C1510-3	V	C1510-4

Is the voltage greater than 11 volts?

Yes	GO to U10

No	REPAIR the circuit.

U4 CHECK FOR LDCMA (LIGHTING DRIVER CONTROL MODULE A) OR LDCMB (LIGHTING DRIVER CONTROL MODULE B) DIAGNOSTIC TROUBLE CODES (DTCS)

- Using a diagnostic scan tool, perform the LDCMA (Lighting Driver Control Module A) (LH (left-hand) headlamp) or LDCMB (Lighting Driver Control Module B) (RH (right-hand) headlamp) self-test.

Is LDCMA (Lighting Driver Control Module A) or LDCMB (Lighting Driver Control Module B) Diagnostic Trouble Codes (DTCs) present?

Yes	For LDCMA (Lighting Driver Control Module A) DTC (diagnostic trouble code) B1A57:4B or LDCMB (Lighting Driver Control Module B) DTC (diagnostic trouble code) B1A58:4B, GO to U5 For all other LDCMA (Lighting Driver Control Module A) or LDCMB (Lighting Driver Control Module B) headlamp leveling motor Diagnostic Trouble Codes (DTCs), GO to U8

No	GO to U8

U7 CHECK THE VEHICLE HISTORY

- Check the vehicle history for LDCMA (Lighting Driver Control Module A) DTC (diagnostic trouble code) B1A57:4B or LDCMB (Lighting Driver Control Module B) DTC (diagnostic trouble code) B1A58:4B.

Has the vehicle set the same DTC (diagnostic trouble code) in the past?

Yes	GO to U8

No	INSPECT the front turn signal lamp, wiring, headlamp and LDCM (Lighting Driver Control Module) for damage. REPAIR the wiring or REPLACE any damaged components. If not signs of damage are found, the system is operating correctly at this time.

U8 CHECK THE HEADLAMP MOUNTED LDCM (LIGHTING DRIVER CONTROL MODULE) VOLTAGE CIRCUITS FOR AN OPEN

- Place the LH (left-hand) steering column multifunction switch in the LOW BEAM position.
- Place the headlamp switch in the OFF position.
- Ignition OFF.
- Disconnect: Suspect LH (left-hand) Headlamp C1509 or RH (right-hand) Headlamp C1510.
- Ignition ON.
- Place the headlamp switch in the HEADLAMPS position.
- Measure:
  LH (left-hand) Headlamp

Positive Lead	Measurement / Action	Negative Lead
C1509-3	V⎓	Ground
C1509-5	V⎓	Ground

C1510-3	V	C1510-2
C1510-3	V	C1510-4

Is the voltage greater than 11 volts?

Yes	GO to U10

No	REPAIR the circuit.

U10 CHECK THE HEADLAMP MOUNTED LDCM (LIGHTING DRIVER CONTROL MODULE) PROGRAMMING

- Place the headlamp switch in the OFF positions.
- Using a diagnostic scan tool, complete the PMI (programmable module installation) process for the LDCMA (Lighting Driver Control Module A) (LH (left-hand) headlamp) or for the LDCMB (Lighting Driver Control Module B) (RH (right-hand) headlamp) following the on-screen instructions.
- Place the headlamp switch in the HEADLAMPS positions.
- Raise the front of the vehicle by the frame slightly, then lower the vehicle to it's normal height.
- REPEAT the LDCMA (Lighting Driver Control Module A) or LDCMB (Lighting Driver Control Module B) self-test.

Is the concern still present or does any Diagnostic Trouble Codes (DTCs) return?

Yes	GO to U11

No	The system is operating correctly at this time. The concern may was caused by the LDCM (Lighting Driver Control Module) .

U11 CHECK THE HEADLAMP MOUNTED LDCM (LIGHTING DRIVER CONTROL MODULE)

- Place the headlamp switch in the OFF positions.
- Ignition OFF.
- Reinstall the original headlamp assembly for the inoperative side of the vehicle.

Headlamps

417-01 Exterior Lighting	***2022 F-150***
Diagnosis and Testing	***Procedure revision date: 04/8/2022***

Headlamps

Diagnostic Trouble Code (DTC) Chart

Diagnostics in this manual assume a certain skill level and knowledge of Ford-specific diagnostic practices.

REFER to: Diagnostic Methods

(100-00 General Information, Description and Operation).

Diagnostic Trouble Code Chart

Module	DTC (diagnostic trouble code)	Description	Action
BCM (body control module)	B14E0:11	Exterior Lamps Power Supply "C": Circuit Short to Ground	GO to Pinpoint Test A
BCM (body control module)	B14E0:11	Exterior Lamps Power Supply "C": Circuit Short to Ground	GO to Pinpoint Test B
BCM (body control module)	B14E0:15	Exterior Lamps Power Supply "C": Circuit Short to Battery or Open	GO to Pinpoint Test A
BCM (body control module)	B14E0:15	Exterior Lamps Power Supply "C": Circuit Short to Battery or Open	GO to Pinpoint Test B