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1990 FORD Fiesta 5 Doors OEM Service and Repair Workshop Manual

Go to manual page

• Measure:

LH (left-hand) Headlamp

Positive Lead	Measurement / Action	Negative Lead
C1284-8	v	Ground

RH (right-hand) Headlamp

Positive Lead	Measurement / Action	Negative Lead
C1285-8	$\overline{\mathbf{v}}$	Ground

Is the voltage greater than 11 volts?

Yes GO to D12

No
Verify the BCMC (body control module C) (also known as the BJB (battery junction box)) fuse 100 (15A) (LH (left-hand) headlamp) and fuse 101 (15A) (RH (right-hand) headlamp) is OK. If OK, GO to D4 If not OK, REFER to the Wiring Diagrams manual to identify the possible causes of the circuit short.

D4 CHECK THE HEADLAMP RELAY ENERGIZE CIRCUIT FOR VOLTAGE

- Ignition OFF.
- Disconnect: BCMC (body control module C) (also known as the BJB (battery junction box)) C1035B (RH (right-hand) headlamp).
- Disconnect: BCMC (body control module C) (also known as the BJB (battery junction box)) C1035C (LH (left-hand) headlamp).
- Ignition ON.
- Place the headlamp switch in the HEADLAMPS position.
- Measure:

	Positive Lead	Measurement / Action	Negative Lead	
	C2280G-6	Ω	Ground	
ls th	e resistance gr	eater than 10,000 ohms	5?	
Yes	GO to D6			
Νο	REPAIR the	circuit.		
D6 C	HECK THE HEAI	DLAMP RELAY ENERGIZ	E CIRCUIT FOR A	N OPEN
•	Measure: LH (left-hand)	Headlamp		
	Positive Lead	Measurement / Action	Negative Lead	
	C1035C-21	Ω	C2280G-11	
	RH (right-hand	l) Headlamp		
	Positive Lead	Measurement / Action	Negative Lead	
	C1035B-32	Ω	C2280G-6	
ls th	e resistance les	ss than 3 ohms?	1	
Yes	GO to D15	5		

Do the PID (parameter identification) values agree with the LH (left-hand) steering column multifunction switch position?

Yes	GO to D9			
No	 INSTALL a new LH (left-hand) steering column multifunction switch. REFER to: Steering Column Multifunction Switch LH (211-05 Steering Wheel and Column Electrical Components, Removal and Installation). TEST the system for normal operation. If the concern still exists, GO to D14 			
D9 CI SHOI	HECK BCM (BODY CONTROL MODULE) LIN (LOCAL INTERCONNECT NETWORK) CIRCUITS FOR A RT TO VOLTAGE			
•	 Place the headlamp switch in the OFF position. Ignition OFF. Disconnect: BCM (body control module) C2280F. Disconnect: LH (left-hand) Headlamp C1284 and RH (right-hand) Headlamp C1285. Ignition ON. Measure: 			
	Positive Lead Measurement / Action Negative Lead C2280F-15 V Ground			
ls an	y voltage present?			
Yes	REPAIR the circuit.			
No	GO to D10			
D10 (SHOI	CHECK BCM (BODY CONTROL MODULE) LIN (LOCAL INTERCONNECT NETWORK) CIRCUITS FOR A RT TO GROUND			
•	Ignition OFF.			

- Ignition OFF.
- Substitute the known good headlamp assembly from the opposite side of the vehicle.
- Ignition ON.
- Using a diagnostic scan tool, perform the BCM (body control module) Local Interconnect Network (LIN) New Module Initialization routine.
- CLEAR the Diagnostic Trouble Codes (DTCs), REPEAT the self-test (required to enable the lamp output driver) and cycle the ignition OFF and ON. REPEAT the self-test.
- Place the headlamp switch in the HEADLAMPS position and the LH (left-hand) steering column multifunction switch in the HIGH BEAM position.
- Observe the system and determine if the concern is still present.

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

Yes	GO to D15	
No	GO to D13	

D13 CHECK THE LED (LIGHT EMITTING DIODE) CONTROL MODULE

- Place the LH (left-hand) steering column multifunction switch in the LOW BEAM position and the headlamp switch in the OFF position.
- Ignition OFF.
- Reinstall the original headlamp assembly for the inoperative side of the vehicle.

• NOTE

Before using known good LED (light emitting diode) control module, make sure the part label exactly matches the suspect LED (light emitting diode) control module. If any differences are noted, do not use the module from the opposite side of the vehicle, INSTALL a new LED (light emitting diode) control module on the suspect headlamp.

Substitute the known good LED (light emitting diode) control module from the opposite headlamp.

- Ignition ON.
- Using a diagnostic scan tool, perform the BCM (body control module) Local Interconnect Network (LIN) New Module Initialization routine.
- CLEAR the Diagnostic Trouble Codes (DTCs), REPEAT the self-test (required to enable the lamp output driver) and cycle the ignition OFF and ON. REPEAT the self-test.
- Place the headlamp switch in the HEADLAMPS position and the LH (left-hand) steering column multifunction switch in the HIGH BEAM position.
- Observe the system and determine if the concern is still present.

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.

D15 CHECK FOR CORRECT BCM (BODY CONTROL MODULE) OPERATION

- Disconnect and inspect all BCM (body control module) and all related in-line connectors.
- Repair:

No

- corrosion (install new connector or terminals clean module pins)
- damaged or bent pins install new terminals/pins
- pushed-out pins install new pins as necessary
- Reconnect the BCM (body control module) and all related in-line connectors. Make sure they seat and latch correctly.
- Operate the system and determine if the concern is still present.

Is the concern still present?

 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
 Yes
 FOLLOW the service article instructions. If no service articles address this concern, INSTALL a new BCM (body control module). REFER to: Body Control Module (BCM) (419-10 Multifunction Electronic Modules, Removal and Installation).

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

PINPOINT TEST E : ONE OR BOTH HIGH BEAMS IS INOPERATIVE OR ALWAYS ON - HIGH SERIES LED (LIGHT EMITTING DIODE) HEADLAMPS

Refer to Wiring Diagrams Cell 85for schematic and connector information. **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**

HCM (headlamp control module) B14D9:87	Left Headlamp Light Distribution Actuator: Missing Message	A continuous memory and on-demand DTC (diagnostic trouble code) that sets when the HCM (headlamp control module) does not receive a headlamp light distribution actuator message from the LED (light emitting diode) control module on the LH (left- hand) headlamp LIN (local interconnect network) circuit.
HCM (headlamp control module) B14DA:01	Right Headlamp Light Distribution Actuator: General Electrical Failure	A continuous memory and on-demand DTC (diagnostic trouble code) that sets when the HCM (headlamp control module) receives a message from the LED (light emitting diode) control module on the RH (right-hand) headlamp LIN (local interconnect network) circuit that there is a failure of the headlamp light distribution actuator.
HCM (headlamp control module) B14DA:64	Right Headlamp Light Distribution Actuator: Signal Plausibility Failure	A continuous memory and on-demand DTC (diagnostic trouble code) that sets when the HCM (headlamp control module) receives a message from the LED (light emitting diode) control module on the RH (right-hand) headlamp LIN (local interconnect network) circuit that the headlamp light distribution actuator signal is not within it's operational limits.
HCM (headlamp control module) B14DA:87	Right Headlamp Light Distribution Actuator: Missing Message	A continuous memory and on-demand DTC (diagnostic trouble code) that sets when the HCM (headlamp control module) does not receive a headlamp light distribution actuator message from the LED (light emitting diode) control module on the RH (right- hand) headlamp LIN (local interconnect network) circuit.
HCM (headlamp control module) B14DB:01	Left Headlamp Driver Control System: General Electrical Failure	A continuous memory and on-demand DTC (diagnostic trouble code) that sets when the HCM (headlamp control module) receives a message from the LED (light emitting diode) control module on the LH (left-hand) headlamp LIN (local interconnect network) circuit that there is a failure of the headlamp driver control system.
HCM (headlamp control module) B14DB:54	Left Headlamp Driver Control System: Missing Calibration	A continuous memory and on-demand DTC (diagnostic trouble code) that sets when the HCM (headlamp control module) receives a message from the LED (light emitting diode) control module on the LH (left-hand) headlamp LIN (local interconnect network) circuit that the headlamp driver control system is missing it's calibration.

HCM (headlamp control module) B15A6:01	Right Matrix Controller Actuator: General Electrical Failure	A continuous memory and on-demand DTC (diagnostic trouble code) that sets when the HCM (headlamp control module) receives a message from the LED (light emitting diode) control module on the RH (right-hand) headlamp LIN (local interconnect network) circuit that there is a failure of the matrix controller actuator.
HCM (headlamp control module) B15A6:87	Right Matrix Controller Actuator: Missing Message	A continuous memory and on-demand DTC (diagnostic trouble code) that sets when the HCM (headlamp control module) receives a message from the LED (light emitting diode) control module on the RH (right-hand) headlamp LIN (local interconnect network) circuit that there is a failure of the matrix controller actuator.
HCM (headlamp control module) B15A7:01	Left Matrix Controller Actuator: General Electrical Failure	A continuous memory and on-demand DTC (diagnostic trouble code) that sets when the HCM (headlamp control module) receives a message from the LED (light emitting diode) control module on the LH (left-hand) headlamp LIN (local interconnect network) circuit that there is a failure of the matrix controller actuator.
HCM (headlamp control module) B15A7:87	Left Matrix Controller Actuator: Missing Message	A continuous memory and on-demand DTC (diagnostic trouble code) that sets when the HCM (headlamp control module) does not receive a headlamp driver control system message from the LED (light emitting diode) control module on the LH (left-hand) headlamp LIN (local interconnect network) circuit.

Possible Sources

- Wiring, terminals or connectors
- LH (left-hand) steering column multifunction switch
- LED (light emitting diode) control module
- Headlamp assembly
- SCCM (steering column control module)
- HCM (headlamp control module)

Visual Inspection and Pre-checks

- Verify the BCMC (body control module C) (also known as the BJB (battery junction box)) fuse 100 (15A) (LH (left-hand) headlamp) and fuse 101 (15A) (RH (right-hand) headlamp) is OK.
- Inspect the headlamp assembly for damage.

- Ignition OFF.
- Disconnect: HCM (headlamp control module) C2129.
- Disconnect: LH (left-hand) Headlamp C1284 or RH (right-hand) Headlamp C1285.
- Ignition ON.
- Measure:

LH (left-hand) Headlamp

Positive Lead	Measurement / Action	Negative Lead
C2129-1	Ÿ	Ground

RH (right-hand) Headlamp

Positive Lead	Measurement / Action	Negative Lead
C2129-6	Ϋ́	Ground

Is any voltage present?

Yes	REPAIR the circuit.
Νο	GO to E4

E4 CHECK BCM (BODY CONTROL MODULE) LIN (LOCAL INTERCONNECT NETWORK) CIRCUITS FOR A SHORT TO GROUND

- Ignition OFF.
- Measure:

LH (left-hand) Headlamp

Positive Lead	Measurement / Action	Negative Lead
		6

Is the resistance less than 3 ohms?

Yes	GO to E6
No	REPAIR the circuit.
NO	REPAIR the circuit.

E6 CHECK THE HEADLAMP

- Place the LH (left-hand) steering column multifunction switch in the LOW BEAM position and the headlamp switch in the OFF position.
- Ignition OFF.
- Substitute the known good headlamp assembly from the opposite side of the vehicle.
- Ignition ON.
- Using a diagnostic scan tool, perform the BCM (body control module) Local Interconnect Network (LIN) New Module Initialization routine.
- CLEAR the Diagnostic Trouble Codes (DTCs), REPEAT the self-test (required to enable the lamp output driver) and cycle the ignition OFF and ON. REPEAT the self-test.
- Place the headlamp switch in the HEADLAMPS position and the LH (left-hand) steering column multifunction switch in the HIGH BEAM position.
- Observe the system and determine if the concern is still present.

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

Yes	GO to E9
No	

E7 CHECK THE LED (LIGHT EMITTING DIODE) CONTROL MODULE

- Place the LH (left-hand) steering column multifunction switch in the LOW BEAM position and the headlamp switch in the OFF position.
- Ignition OFF.
- Reinstall the original headlamp assembly for the inoperative side of the vehicle.
- NOTE