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2019 Ford Fiesta Service and Repair Manual

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Powertrain Control Module (PCM)

The center of the engine control (EC) system is a microprocessor called the PCM (powertrain control module) . The PCM (powertrain control module) receives input from sensors and other electronic components (switches, relays). Based on the information received and programmed into its memory, the PCM (powertrain control module) generates output signals to control various relays, solenoids and actuators.

Global Customer Symptom Code (GCSC) 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).

Global Customer Symptom Code Chart

Customer Symptom	Action
Start/Run/Move > Starting > Hard Start/Long Crank > Always	GO to Pinpoint Test JD

Pinpoint Tests

PINPOINT TEST JD : CRANKSHAFT POSITION (CKP) SENSOR

Normal Operation and Fault Conditions

Refer to the DTC (diagnostic trouble code) Fault Trigger Conditions.

DTC Fault Trigger Conditions

DTC (diagnostic trouble code)	Description	Fault Trigger Condition
PCM (powertrain control module) P0315:00	Crankshaft Position System Variation Not Learned: No Sub Type Information	Sets when the PCM (powertrain control module) has not learned the crankshaft pulse wheel tooth spacing. This DTC (diagnostic trouble code) disables the misfire monitor. The misfire monitor neutral profile correction must be relearned after any engine rotational component installation or repair. Carry out the Misfire Monitor Neutral Profile Correction procedure using the scan tool. Refer to the Flash EEPROM (electrically erasable programmable read only memory) , Neutral Profile Correction.
PCM (powertrain control module) P0335:00	Crankshaft Position Sensor 'A' Circuit: No Sub Type Information	Sets when the PCM (powertrain control module) detects the CKP (crankshaft position) sensor PIP (profile ignition pick-up) pulse is missing for greater than a calibrated number of camshaft revolutions when the camshaft speed exceeds the equivalent speed of engine idle or the starter motor is engaged. An inactive CKP (crankshaft position) signal causes a no start condition. Monitor the RPM PID (parameter

Electronic Engine Controls

303-14C Electronic Engine Controls - 3.5L EcoBoost (BM)	***2022 F-150***
Diagnosis and Testing	***Procedure revision date: 11/18/2022***

Electronic Engine Controls

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
PCM (powertrain control module)	P0298:00	Engine Oil Over Temperature Condition: No Sub Type Information	GO to Pinpoint Test DY
PCM (powertrain control module)	P0521:00	Engine Oil Pressure Sensor/Switch "A" Circuit Range/Performance: No Sub Type Information	GO to Pinpoint Test U
PCM (powertrain control module)	P0524:00	Engine Oil Pressure Too Low: No Sub Type Information	GO to Pinpoint Test U
PCM (powertrain control module)	P0604:00	Internal Control Module Random Access Memory (RAM) Error: No Sub Type Information	GO to Pinpoint Test QA

PCM (powertrain control module)	P1001:00	KOER Not Able to Complete, KOER Aborted: No Sub Type Information	GO to Pinpoint Test X
PCM (powertrain control module)	P112A:00	Too Many Engine Starts During Factory/Transport Mode: No Sub Type Information	GO to Pinpoint Test Y
PCM (powertrain control module)	P160A:00	Control Module Vehicle Options Reconfiguration Error: No Sub Type Information	GO to Pinpoint Test QA
PCM (powertrain control module)	P161C:00	Automatic Engine Shutdown Mismatch with Vehicle Configuration: No Sub Type Information	GO to Pinpoint Test QA
PCM (powertrain control module)	P26C5:00	Exhaust Flow Control Valve "A" Control Circuit/Open: No Sub Type Information	GO to Pinpoint Test AA
PCM (powertrain control module)	P26C6:00	Exhaust Flow Control Valve "A" Control Circuit Low: No Sub Type Information	GO to Pinpoint Test AA
PCM (powertrain control module)	P26C7:00	Exhaust Flow Control Valve "A" Control Circuit High: No Sub Type Information	GO to Pinpoint Test AA
PCM (powertrain control module)	P26FE:00	Exhaust Flow Control Valve "A" Control Performance: No Sub Type Information	GO to Pinpoint Test AA
PCM (powertrain control module)	P2BF5:00	Exhaust Flow Control Valve "A" Position Circuit Range/Performance: No Sub Type Information	GO to Pinpoint Test AA
PCM (powertrain control module)	P2BF8:00	Exhaust Flow Control Valve "B" Control Circuit/Open: No Sub Type Information	GO to Pinpoint Test AB
PCM (powertrain control module)	P2BF9:00	Exhaust Flow Control Valve "B" Control Circuit Low: No Sub Type Information	GO to Pinpoint Test AB

PCM (powertrain control module)	U0140:00	Lost Communication With Body Control Module: No Sub Type Information	GO to Pinpoint Test J
PCM (powertrain control module)	U0151:00	Lost Communication With Restraints Control Module: No Sub Type Information	GO to Pinpoint Test K
PCM (powertrain control module)	U0155:00	Lost Communication With Instrument Panel Cluster (IPC) Control Module: No Sub Type Information	GO to Pinpoint Test L
PCM (powertrain control module)	U0164:00	Lost Communication With HVAC Control Module: No Sub Type Information	GO to Pinpoint Test M
PCM (powertrain control module)	U0199:00	Lost Communication With "Door Control Module A": No Sub Type Information	GO to Pinpoint Test N
PCM (powertrain control module)	U0200:00	Lost Communication With "Door Control Module B": No Sub Type Information	GO to Pinpoint Test O
PCM (powertrain control module)	U0212:00	Lost Communication With Steering Column Control Module: No Sub Type Information	GO to Pinpoint Test E
PCM (powertrain control module)	U023A:00	Lost Communication With Image Processing Module A: No Sub Type Information	GO to Pinpoint Test P
PCM (powertrain control module)	U0253:00	Lost Communication With Accessory Protocol Interface Module: No Sub Type Information	GO to Pinpoint Test Q
PCM (powertrain control module)	U0288:00	Lost Communication With DC/AC Converter Control Module "A": No Sub Type Information	GO to Pinpoint Test R
PCM (powertrain control module)	U0402:00	Invalid Data Received from TCM: No Sub Type Information	GO to Pinpoint Test S

PCM (powertrain control module)	U2101:00	Control Module Configuration Incompatible: No Sub Type Information	GO to Pinpoint Test QA
PCM (powertrain control module)	U2200:00	Control Module Configuration Memory Corrupt: No Sub Type Information	GO to Pinpoint Test QA
PCM (powertrain control module)	U3003:00	Battery Voltage: No Sub Type Information	GO to Pinpoint Test T

Pinpoint Tests

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).

PINPOINT TEST A : U0101

Normal Operation and Fault Conditions

If the PCM (powertrain control module) does not receive messages from other modules within a certain time frame the PCM (powertrain control module) sets a DTC (diagnostic trouble code) for lost communication.

DTC Fault Trigger Conditions

DTC (diagnostic trouble code)	Description	Fault Trigger Condition
PCM (powertrain control module) U0101:00	Lost Communication with TCM: No Sub Type Information	The PCM (powertrain control module) sets this DTC (diagnostic trouble code) if data messages from the TCM (transmission control module) module through the GWM (gateway module A) are missing.

Possible Sources

- Communications network concern
- GSM (gear shift module)
- GWM (gateway module A)
- PCM (powertrain control module)

Are any Diagnostic Trouble Codes (DTCs) recorded?

Yes	REFER to: Controller Area Network (CAN) Module Communications Network(418-00A Controller Area Network (CAN) Module Communications Network, Diagnosis and Testing).
No	GO to A5

A5 PERFORM THE PCM (POWERTRAIN CONTROL MODULE) SELF-TEST

- Using a diagnostic scan tool, perform the PCM (powertrain control module) self-test.

Are any non-network Diagnostic Trouble Codes (DTCs) present?

Yes	REFER to PCM DTC Chart in this section.
No	GO to A6

A6 RECHECK THE PCM (POWERTRAIN CONTROL MODULE) DIAGNOSTIC TROUBLE CODES (DTCS)

NOTE

If new modules were installed prior to the DTC (diagnostic trouble code) being set, the module configuration may be incorrectly set during the PMI (programmable module installation) , or the PMI (programmable module installation) may not have been carried out.

- Using a diagnostic scan tool, clear the Diagnostic Trouble Codes (DTCs).
- Wait 10 seconds.
- Repeat the PCM (powertrain control module) self-test.

Is DTC (diagnostic trouble code) U0103 still present?

Yes	GO to A7
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.

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 TCM (transmission control module) . REFER to: Transmission Control Module (TCM) (307-01A Automatic Transmission - 10-Speed Automatic Transmission – 10R80, 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 B : U0103

Normal Operation and Fault Conditions

If the PCM (powertrain control module) does not receive messages from other modules within a certain time frame the PCM (powertrain control module) sets a DTC (diagnostic trouble code) for lost communication.

DTC Fault Trigger Conditions

DTC (diagnostic trouble code)	Description	Fault Trigger Condition
PCM (powertrain control module) U0103:00	Lost Communication With Gear Shift Control Module A: No Sub Type Information	The PCM (powertrain control module) sets this DTC (diagnostic trouble code) if data messages from the GSM (gear shift module) module through the GWM (gateway module A) are missing.

Possible Sources

- Communications network concern
- GSM (gear shift module)
- GWM (gateway module A)
- PCM (powertrain control module)

B1 VERIFY THE CUSTOMER CONCERN

B4 CHECK THE GWM (GATEWAY MODULE A) DIAGNOSTIC TROUBLE CODES (DTCS)

- Using a diagnostic scan tool, retrieve the GWM (gateway module A) Diagnostic Trouble Codes (DTCs).

Are any Diagnostic Trouble Codes (DTCs) recorded?

Yes	REFER to: Controller Area Network (CAN) Module Communications Network(418-00A Controller Area Network (CAN) Module Communications Network, Diagnosis and Testing).
No	GO to B5

B5 PERFORM THE PCM (POWERTRAIN CONTROL MODULE) SELF-TEST

- Using a diagnostic scan tool, perform the PCM (powertrain control module) self-test.

Are any non-network Diagnostic Trouble Codes (DTCs) present?

Yes	REFER to PCM DTC Chart in this section.
No	GO to B6

B6 RECHECK THE PCM (POWERTRAIN CONTROL MODULE) DIAGNOSTIC TROUBLE CODES (DTCS)

NOTE

If new modules were installed prior to the DTC (diagnostic trouble code) being set, the module configuration may be incorrectly set during the PMI (programmable module installation) , or the PMI (programmable module installation) may not have been carried out.

- Using a diagnostic scan tool, clear the Diagnostic Trouble Codes (DTCs).
- Wait 10 seconds.
- Repeat the PCM (powertrain control module) self-test.

Is DTC (diagnostic trouble code) U0103 still present?

Yes	GO to B7