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2019 Ford F-250 Super Duty Service and Repair Manual

Go to manual page

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) U023A still present?

Yes	GO to P7

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.

P7 CHECK FOR OTHER CAUSES OF COMMUNICATION NETWORK CONCERN

NOTE

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

- CHECK the vehicle service history for recent service actions related to the IPMA (image processing module A) , GWM (gateway module A) or PCM (powertrain control module) . If recent service history is found:
  - verify correct replacement module was installed
    - HVBOM may be used to verify correct part fitment
  - verify the configuration of replacement module was correct
    - re-configure module using as-built data if prior configuration is suspect
  - verify the module was not obtained from a like vehicle and installed into customer vehicle
    - return the swapped module to source vehicle and obtain new replacement module
- Operate the system and determine if the observable symptom is still present.

Is the observable symptom still present?

Yes	GO to P8

DTC (diagnostic trouble code)	Description	Fault Trigger Condition
PCM (powertrain control module) U0253:00	Lost Communication With Accessory Protocol Interface Module: No Sub Type Information	The PCM (powertrain control module) sets this DTC (diagnostic trouble code) if data messages from the APIM (SYNC module) through the GWM (gateway module A) are missing.

Possible Sources

- Communications network concern
- APIM (SYNC module)
- GWM (gateway module A)
- PCM (powertrain control module)

Q1 VERIFY THE CUSTOMER CONCERN

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

Is an observable symptom present?

Yes	GO to Q2

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

Q2 CHECK THE COMMUNICATION NETWORK

- Using a diagnostic scan tool, perform a network test.

Did the APIM (SYNC module) pass the network test?

Yes	GO to Q3

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

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) U0253 still present?

Yes	GO to Q7

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.

Q7 CHECK FOR OTHER CAUSES OF COMMUNICATION NETWORK CONCERN

NOTE

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

- CHECK the vehicle service history for recent service actions related to the , APIM (SYNC module) GWM (gateway module A) or PCM (powertrain control module) . If recent service history is found:
  - verify correct replacement module was installed
    - HVBOM may be used to verify correct part fitment
  - verify the configuration of replacement module was correct
    - re-configure module using as-built data if prior configuration is suspect
  - verify the module was not obtained from a like vehicle and installed into customer vehicle
    - return the swapped module to source vehicle and obtain new replacement module
- Operate the system and determine if the observable symptom is still present.

Is the observable symptom still present?

Yes	GO to Q8

DTC (diagnostic trouble code)	Description	Fault Trigger Condition
PCM (powertrain control module) U0288:00	Lost Communication With DC/AC Converter Control Module 'A': No Sub Type Information	The PCM (powertrain control module) sets this DTC (diagnostic trouble code) if data messages from the DCACA (Direct Current/Alternating Current Converter Module A) through the GWM (gateway module A) are missing.

Possible Sources

- Communications network concern
- DCACA (Direct Current/Alternating Current Converter Module A)
- GWM (gateway module A)
- PCM (powertrain control module)

R1 VERIFY THE CUSTOMER CONCERN

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

Is an observable symptom present?

Yes	GO to R2

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

R2 CHECK THE COMMUNICATION NETWORK

- Using a diagnostic scan tool, perform a network test.

Did the DCACA (Direct Current/Alternating Current Converter Module A) pass the network test?

Yes	GO to R3

- 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 R6

R6 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) U0288 still present?

Yes	GO to R7
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.

R7 CHECK FOR OTHER CAUSES OF COMMUNICATION NETWORK CONCERN

NOTE

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

- CHECK the vehicle service history for recent service actions related to the , DCACA (Direct Current/Alternating Current Converter Module A) , GWM (gateway module A) or PCM (powertrain

	(414-05 Voltage Converter/Inverter, Removal and Installation). REFER to: Direct Current/Alternating Current (DC/AC) Inverter - Vehicles With: 110-120V 2kW Pickup Bed Power Outlet (414-05 Voltage Converter/Inverter, 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 : U0404, U0405, U0415, U0422, U0423, U0554, U1011, U1012, U1013, U1022

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 invalid data.

DTC Fault Trigger Conditions

DTC (diagnostic trouble code)	Description	Fault Trigger Condition
PCM (powertrain control module) U0402:00	Invalid Data Received from TCM: No Sub Type Information	The PCM (powertrain control module) sets this DTC (diagnostic trouble code) when the PCM (powertrain control module) receives invalid network data from the TCM (transmission control module) .
PCM (powertrain control module) U0404:00	Invalid Data Received from Gear Shift Control Module A: No Sub Type Information	The PCM (powertrain control module) sets this DTC (diagnostic trouble code) when the PCM (powertrain control module) receives invalid network data from the GSM (gear shift module) .
PCM (powertrain control module) U0405:00	Invalid Data Received From Cruise Control Module: No Sub Type Information	The PCM (powertrain control module) sets this DTC (diagnostic trouble code) when the PCM (powertrain control module) receives invalid network data from the CCM (cruise control module) .

		network data from the TCM (transmission control module) .
PCM (powertrain control module) U1022:00	Invalid Internal Control Module Monitoring Data Received from Body Control Module: No Sub Type Information	The PCM (powertrain control module) sets this DTC (diagnostic trouble code) when the PCM (powertrain control module) receives invalid network data from the BCM (body control module) .

Possible Sources

- Suspect Module

S1 CHECK FOR DIAGNOSTIC TROUBLE CODES (DTCS) FROM THE MODULE SENDING INVALID DATA

- Using a diagnostic scan tool, carry out the self-test for the module in question sending the invalid data.

Are any Diagnostic Trouble Codes (DTCs) present from the module sending the invalid data?

Yes	DIAGNOSE the module sending the invalid data. REFER to the appropriate section in the Workshop Manual.

No	DIAGNOSE the observable symptom.

PINPOINT TEST T : U3003

Refer to Wiring Diagrams Cell 24for schematic and connector information.
Normal Operation and Fault Conditions The PCM (powertrain control module) receives voltage at all times from the BJB (battery junction box) . **DTC Fault Trigger Conditions**

DTC (diagnostic trouble code)	Description	Fault Trigger Condition
PCM (powertrain control module) U3003:00	Battery Voltage: No Sub Type Information	This DTC (diagnostic trouble code) sets when the PCM (powertrain control module) detects lower than expected battery voltage on the voltage supply input circuit.

Possible Sources

Yes	GO to T4

No	If the battery is discharged, DIAGNOSE the cause of the low battery condition. REFER to: Charging System - 2.7L EcoBoost (238kW/324PS)/3.5L EcoBoost (BM) (414-00 Charging System - General Information, Diagnosis and Testing). If the battery condition fails, INSTALL a new battery. REFER to: Battery (414-01 Battery, Mounting and Cables, Removal and Installation).

T4 COMPARE THE PCM (POWERTRAIN CONTROL MODULE) BATT_V_INF (V) PID (PARAMETER IDENTIFICATION) WITH THE ACTUAL BATTERY VOLTAGE

- Ignition ON.
- Measure:

Positive Lead	Measurement / Action	Negative Lead
C175B-2	V⎓	Ground
C175B-16	V⎓	Ground
C175B-17	V⎓	Ground

Are the voltages within 0.2 volt of the recorded battery voltage?

Yes	GO to T6

No	REPAIR the circuit in question for high resistance.

T6 CHECK THE PCM (POWERTRAIN CONTROL MODULE) GROUNDS

- Ignition OFF.
- Removed the fused jumper.
- Measure:

Positive Lead	Measurement / Action	Negative Lead
C175B-46	Ω	Ground
C175B-47	Ω	Ground