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## 2020 Ford Transit-250 Service and Repair Manual

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

**Did the GSM (gear shift module) module pass the network test?**

<b>Yes</b>	GO to <a href="#">A3</a>
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<b>No</b>	REFER to: <a href="#">Controller Area Network (CAN) Module Communications Network</a> (418-00A Controller Area Network (CAN) Module Communications Network, Diagnosis and Testing).
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**A3 PERFORM GSM (GEAR SHIFT MODULE) CONTROL MODULE SELF-TEST**

- Using a diagnostic scan tool, perform a GSM (gear shift module) control module self-test.

**Are any Diagnostic Trouble Codes (DTCs) recorded?**

<b>Yes</b>	REFER to: <a href="#">External Controls - Vehicles With: Column Shift</a> (307-05B Automatic Transmission External Controls - 10-Speed Automatic Transmission – 10R80, Diagnosis and Testing). REFER to: <a href="#">External Controls - Vehicles With: Column Shift</a> (307-05B Automatic Transmission External Controls - 10-Speed Automatic Transmission – 10R80, Diagnosis and Testing).
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<b>No</b>	GO to <a href="#">A4</a>
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**A4 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?**

<b>Yes</b>	REFER to: <a href="#">Controller Area Network (CAN) Module Communications Network</a> (418-00A Controller Area Network (CAN) Module Communications Network, Diagnosis and Testing).
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<b>No</b>	GO to <a href="#">A5</a>
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**A5 PERFORM THE PCM (POWERTRAIN CONTROL MODULE) SELF-TEST**

- 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?**

<b>Yes</b>	GO to <a href="#">A8</a>
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<b>No</b>	The system is operating correctly at this time. The concern may have been due to incorrect parts replacement procedures or incorrect module configuration.
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**A8 CHECK FOR CORRECT GSM (GEAR SHIFT MODULE) MODULE OPERATION**

- Ignition OFF.
- Disconnect and inspect the GSM (gear shift module) connector(s).
- Repair:
  - 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 GSM (gear shift module) connector(s). Make sure it seats and latches correctly.
- Operate the system and determine if the concern is still present.

**Is the concern still present?**

<b>Yes</b>	<p>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 GSM (gear shift module) .</p> <p>REFER to: <a href="#">Gear Shift Module (GSM) - Vehicles With: Column Shift</a> (307-05B Automatic Transmission External Controls - 10-Speed Automatic Transmission – 10R80, Removal and Installation).</p> <p>REFER to: <a href="#">Gear Shift Module (GSM) - Vehicles With: Console Shift</a></p>
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<b>No</b>	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.
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## **B2 CHECK THE COMMUNICATION NETWORK**

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

**Did the CCM (cruise control module) module pass the network test?**

<b>Yes</b>	GO to <a href="#">B3</a>
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<b>No</b>	REFER to: <a href="#">Controller Area Network (CAN) Module Communications Network</a> (418-00A Controller Area Network (CAN) Module Communications Network, Diagnosis and Testing).
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## **B3 PERFORM CCM (CRUISE CONTROL MODULE) CONTROL MODULE SELF-TEST**

- Using a diagnostic scan tool, perform a CCM (cruise control module) control module self-test.

**Are any Diagnostic Trouble Codes (DTCs) recorded?**

<b>Yes</b>	REFER to: <a href="#">Cruise Control</a> (419-03B Cruise Control - Vehicles With: Adaptive Cruise Control, Diagnosis and Testing).
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<b>No</b>	GO to <a href="#">B4</a>
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## **B4 CHECK THE GWM (GATEWAY MODULE A) 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) U0104 still present?

Yes	GO to <a href="#">B7</a>
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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.
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## B7 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 CCM (cruise control 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 <a href="#">B8</a>
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DTC (diagnostic trouble code)	Description	Fault Trigger Condition
PCM (powertrain control module) U0121:00	Lost Communication With Anti-Lock Brake System (ABS) Control Module 'A': No Sub Type Information	The PCM (powertrain control module) sets this DTC (diagnostic trouble code) if data messages from the ABS (anti-lock brake system) module through the GWM (gateway module A) are missing.

#### Possible Sources

- Communications network concern
- ABS (anti-lock brake system) module
- GWM (gateway module A)
- PCM (powertrain control module)

#### C1 VERIFY THE CUSTOMER CONCERN

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

#### Is an observable symptom present?

<b>Yes</b>	GO to <a href="#">C2</a>
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<b>No</b>	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.
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#### C2 CHECK THE COMMUNICATION NETWORK

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

#### Did the ABS (anti-lock brake system) module pass the network test?

<b>Yes</b>	GO to <a href="#">C3</a>
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## C6 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) U0121 still present?

<b>Yes</b>	GO to <a href="#">C7</a>
<b>No</b>	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.

## C7 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 ABS (anti-lock brake system) , 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?

DTC (diagnostic trouble code)	Description	Fault Trigger Condition
PCM (powertrain control module) U0126:00	Lost Communication With Steering Angle Sensor Module: No Sub Type Information	The PCM (powertrain control module) sets this DTC (diagnostic trouble code) if data messages from the SCCM (steering column control module) through the GWM (gateway module A) are missing.
PCM (powertrain control module) U0212:00	Lost Communication With Steering Column Control Module: No Sub Type Information	The PCM (powertrain control module) sets this DTC (diagnostic trouble code) if data messages from the SCCM (steering column control module) through the GWM (gateway module A) are missing.

#### Possible Sources

- Communications network concern
- SCCM (steering column control module)
- GWM (gateway module A)
- PCM (powertrain control module)

#### D1 VERIFY THE CUSTOMER CONCERN

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

#### Is an observable symptom present?

<b>Yes</b>	GO to <a href="#">D2</a>
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<b>No</b>	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.
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#### D2 CHECK THE COMMUNICATION NETWORK

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

#### Did the SCCM (steering column control module) module pass the network test?

<b>Yes</b>	GO to <a href="#">D3</a>
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## D6 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) U0126 or U0212 still present?

Yes	GO to <a href="#">D7</a>
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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.
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## D7 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 SCCM (steering column control 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.

Refer to Wiring Diagrams Cell 024 for schematic and connector information.

**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) P0298:00	Engine Oil Overtemperature Condition: No Sub Type Information	Sets when PCM (powertrain control module) detects the engine oil temperature protection strategy in the PCM (powertrain control module) has been activated. This temporarily prohibits high engine speed operation by disabling injectors, to reduce the risk of engine damage from high engine oil temperature. The PCM (powertrain control module) uses an oil algorithm to determine actual engine oil temperature. The engine is operating in high RPM (revolutions per minute) range due to incorrect gear selection. This may cause a lack/loss of power or surge.

**Possible Sources**

- Vehicle driving conditions
- Very high engine RPM (revolutions per minute) for an extended period of time
- Overheating condition
- Base engine concerns

**Pinpoint Test Steps available in the on-line Workshop Manual.**

**PINPOINT TEST F : U0131**

**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)	Lost Communication With Power Steering Control	A continuous memory DTC (diagnostic trouble code) that sets in the PCM (powertrain control module) if