

## QE: Electronic Throttle Control (ETC) System

← [QE: Introduction](#)

### QE1 CHECK FOR DTCS

**Note:** For DTC P061B, make sure the air cleaner and air inlet are correctly seated and properly installed before continuing diagnosis.

Are any DTCS present other than the following: P0600, P060A, P060B, P060C, P060D, P061B, P061C, P061D, P061F, P062C, P1674, P2104, P2105, P2110, or U0300?

Yes	No
<p>DISREGARD the current diagnostic trouble code (DTC) at this time. DIAGNOSE the next DTC. GO to Section 4, <a href="#">Diagnostic Trouble Code (DTC) Charts and Descriptions</a>.</p>	<p>For E-Series 4.6L, E-Series 5.4L, Escape/Mariner, Expedition, F-150, Focus, or Navigator with DTC P0600, GO to <a href="#">QE3</a>.</p> <p>For all others with DTC P0600, GO to <a href="#">QE20</a>.</p> <p>For Crown Victoria, Grand Marquis, Ranger, and Town Car with DTCs P060A, P060C, P060D, P061D, P1674 or U0300, GO to <a href="#">QE3</a>.</p> <p>For all others with DTCs P060A, P060C, P060D, P061D, P1674 or U0300, GO to <a href="#">QE2</a>.</p> <p>For DTC P060B, GO to <a href="#">QE4</a>.</p> <p>For DTC P061B, GO to <a href="#">QE14</a>.</p> <p>For DTC P061C, GO to <a href="#">QE6</a>.</p> <p>For DTC P061F, GO to <a href="#">QE8</a>.</p> <p>For DTCs P062C, P2104, P2105 or P2110, GO to <a href="#">QE9</a>.</p>

### QE2 CHECK THE PCM VOLTAGE CIRCUITS FOR AN OPEN

- Ignition OFF.
- PCM connector disconnected.
- Connect a 5 amp fused jumper wire between the following:

Point A PCM Connector, Harness Side	Point B
PCMRC	Ground

- Ignition ON, engine OFF.
- Measure the voltage between:

( + ) PCM Connector, Harness Side	( - )
VPWR	Ground

Is the voltage greater than 10.5 V?

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Yes	No
GO to <a href="#">QE3</a> .	REPAIR the open circuit. CLEAR the DTCs. REPEAT the self-test.

### QE3 DTCS P060A, P060C, P060D, P061D, P1674 OR U0300: CHECK THE PCM FOR THE LATEST CALIBRATION

- Ignition OFF.
- Remove the jumper wire(s).
- PCM connector connected.
- Program the PCM to the latest calibration.
- Ignition OFF.
- Ignition ON, engine OFF.
- Ignition OFF.
- Ignition ON, engine running.
- Use the customer information to recreate the concern.
- Carry out the self-test.

Are DTCs P060A, P060C, P060D, P061D, P1674 or U0300 present?

Yes	No
GO to <a href="#">QE20</a> .	The concern is not present at this time.

### QE4 DTC P060B: CHECK FOR REFERENCE VOLTAGE CONCERNS

- Inspect the PCM harness for damage.
- Verify the correct operation of the sensors using ETCREF, VREF and related circuits. GO to Pinpoint Test [C](#) and follow the pinpoint test direction.

Is a concern present?

Yes	No
REPAIR as necessary. CLEAR the DTCs. REPEAT the self-test.	GO to <a href="#">QE5</a> .

### QE5 CHECK FOR AN INTERMITTENT CONCERN

- Clear the DTCs.
- Carry out the self-test.

Is DTC P060B present?

Yes	No
GO to <a href="#">QE20</a> .	The concern is not present at this time.

### QE6 DTC P061C: CHECK THE CKP SENSOR FOR CORRECT OPERATION

- Verify correct operation of the CKP sensor and related circuits. GO to Pinpoint Test [JD](#) and follow the pinpoint test direction.

**Is a concern present?**

Yes	No
REPAIR as necessary. CLEAR the DTCs. REPEAT the self-test.	GO to <a href="#">QE7</a> .

**QE7 CHECK THE CMP SENSOR FOR CORRECT OPERATION**

- Verify correct operation of the CMP sensor and related circuits. GO to Pinpoint Test [DR](#) and follow the pinpoint test direction.

**Is a concern present?**

Yes	No
REPAIR as necessary. CLEAR the DTCs. REPEAT the self-test.	GO to <a href="#">QE8</a> .

**QE8 DTC P061F: VERIFY THE CUSTOMER CONCERN**

- Clear the DTCs.
- Use the customer information to recreate the concern.
- Carry out the self-test.

**Are DTCs P061C or P061F present?**

Yes	No
GO to <a href="#">QE20</a> .	The concern is not present at this time.

**QE9 DTCS P062C, P2104, P2105 OR P2110: CHECK FOR DTCS IN OTHER VEHICLE MODULES**

- Check for self-test DTCs in all of the vehicle modules.

**Are any DTCs present?**

Yes	No
REFER to the applicable Workshop Manual Section to DIAGNOSE the DTC.	GO to <a href="#">QE10</a> .

**QE10 CHECK FOR THE PRESENCE OF ANY MODULE COMMUNICATION CONCERNS**

- Check for self-test DTCs in all of the vehicle modules.

**Are any communication concerns or communication DTCs present?**

Yes	No
For communication concerns in the PCM, DISREGARD the current diagnostic trouble code (DTC) at this time. DIAGNOSE the next DTC. GO	For DTC P062C, GO to <a href="#">QE18</a> .

to Section 4, [Diagnostic Trouble Code \(DTC\) Charts and Descriptions](#).

For communication concerns in other modules, REFER to the applicable Workshop Manual Section to DIAGNOSE the communication DTC.

For DTC P2104, GO to [QE11](#).

For DTC P2105, GO to [QE12](#).

For DTC P2110, GO to [QE17](#).

## QE11 DTC P2104: CHECK FOR THE PRESENCE OF PCM DTCS

- Clear the PCM DTCs.
- Check for self-test DTCs.

Are any DTCs present other than P2104?

Yes	No
DISREGARD the current diagnostic trouble code (DTC) at this time. DIAGNOSE the next DTC. GO to Section 4, <a href="#">Diagnostic Trouble Code (DTC) Charts and Descriptions</a> .	GO to Pinpoint Test <a href="#">DK</a> .

## QE12 DTC P2105: CHECK FOR THE PRESENCE OF PCM DTCS

**Note:** P2105 may be set in combination with other DTCs.

- Clear the PCM DTCs.
- Check for self-test DTCs.

Are any DTCs present other than P2105?

Yes	No
DISREGARD the current diagnostic trouble code (DTC) at this time. DIAGNOSE the next DTC. GO to Section 4, <a href="#">Diagnostic Trouble Code (DTC) Charts and Descriptions</a> .	GO to <a href="#">QE13</a> .

## QE13 CARRY OUT A VISUAL INSPECTION

- Ignition OFF.
- Visually inspect the following for obvious signs of damage:
  - ETB
  - PCM
- Check the harness for routing, alterations, incorrect shielding, or electrical interference from other systems. Make sure aftermarket wiring is not routed near the PCM.
- Verify aftermarket equipment does not generate radio frequency interference/electromagnetic interference (RFI/EMI).

Is a concern present?

Yes	No
ISOLATE the concern and REPAIR as necessary.  CLEAR the DTCs. REPEAT the self-test.	GO to <a href="#">QE20</a> .

## QE14 DTC P061B: CHECK FOR THE PRESENCE OF PCM DTCS

**Note:** An intermittent CKP sensor or harness concern may cause DTC P061B to set. Check for intermittent CKP sensor and harness concerns.

- Clear the PCM DTCS.
- Check for self-test DTCS.

Are any DTCS present other than P061B?

Yes	No
DISREGARD the current diagnostic trouble code (DTC) at this time. DIAGNOSE the next DTC. GO to Section 4, <a href="#">Diagnostic Trouble Code (DTC) Charts and Descriptions</a> .	GO to <a href="#">QE15</a> .

## QE15 CHECK FOR MASS AIR FLOW (MAF)/THROTTLE POSITION (TP) SENSOR CORRELATION CONCERNS

**Note:** For a MAF/TP sensor correlation concern DTC P061B may set before DTC P0068 sets.

- Check for a MAF/TP sensor correlation concern. GO to Pinpoint Test [DV](#) and follow the pinpoint test direction for DTC P0068.

Is a concern present?

Yes	No
REPAIR as necessary. CLEAR the DTCS. REPEAT the self-test.	For Crown Victoria, E-Series 4.6L, Explorer 4.0L, Explorer Sport Trac 4.0L, F-150 4.6L 2V, Grand Marquis, Mountaineer 4.0L, Mustang 4.0L, Mustang 5.4L, and Town Car, GO to <a href="#">QE16</a> .  For all others, CHECK for an intermittent concern with an ETC related harness or sensor.  GO to Pinpoint Test <a href="#">Z</a> .

## QE16 CHECK THE MAP INPUT FOR AN OFFSET SIGNAL

- Ignition OFF.
- Allow the vehicle to cool down.
- ESM connector disconnected.

- Measure the resistance between:

<b>( + ) ESM Connector, Component Side</b>	<b>( - ) ESM Connector, Component Side</b>
VREF - Pin 2	SIGRTN - Pin 6

**Is the resistance greater than 2K ohms?**

Yes	No
For Crown Victoria, Grand Marquis, Explorer 4.0L, Explorer Sport Trac 4.0L, Mountaineer 4.0L, and Town Car, GO to <a href="#">QE18</a> . For all others, CHECK for an intermittent concern with an ETC related harness or sensor. GO to Pinpoint Test <a href="#">Z</a> .	INSTALL a new ESM. REFER to the Workshop Manual Section 303-08, Engine Emission Control. CLEAR the DTCs. REPEAT the self-test.

**QE17 DTC P2110: CHECK FOR THE PRESENCE OF PCM DTCS**

**Note:** P2110 sets in combination with other DTCs.

- Clear the PCM DTCs.
- Check for self-test DTCs.

**Are any DTCs present other than P2110?**

Yes	No
DISREGARD the current diagnostic trouble code (DTC) at this time. DIAGNOSE the next DTC. GO to Section 4, <a href="#">Diagnostic Trouble Code (DTC) Charts and Descriptions</a> .	GO to <a href="#">QE20</a> .

**QE18 CHECK FOR ABS AND WHEEL SPEED SENSOR CONCERNS**

**Note:** Refer to [Section 6](#) Reference Values for the typical diagnostic reference values.

- ESM connector connected.
- Ignition ON, engine running.
- Access the PCM and monitor the ISS\_SRC, OSS\_SRC and TSS PIDs.
- Access the PCM and monitor the VSS PID.
- Access the ABS and monitor the LF\_WSPD, LR\_WSPD, RF\_WSPD and RR\_WSPD PIDs.
- Road test the vehicle under various load conditions while comparing the PIDs. Check for signals that are intermittent or do not correspond.

**Do the PID values correspond with the vehicle operating conditions?**

Yes	No
For Explorer 4.0L,	

<p>Explorer Sport Trac 4.0L, and Mountaineer 4.0L, GO to <a href="#">QE19</a>.</p> <p>For all others, CHECK for an intermittent concern with an ETC related harness or sensor.</p> <p>GO to Pinpoint Test <a href="#">Z</a>.</p>	<p>REFER to the Workshop Manual Section 206-09, Vehicle Dynamic Systems, to DIAGNOSE any ABS concerns.</p>
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**QE19 CHECK FOR A TRANSFER CASE MECHANICAL CONCERN**

- Stop the vehicle.
- Select 4WD Low.

**Does the vehicle shift into 4WD Low?**

Yes	No
<p>CHECK for an intermittent concern with an ETC related harness or sensor.</p> <p>GO to Pinpoint Test <a href="#">Z</a>.</p>	<p>REFER to the Workshop Manual Section 308-07A, Four Wheel Drive (4WD) Systems, to DIAGNOSE any transfer case concerns.</p>

**QE20 CHECK FOR CORRECT PCM OPERATION**

- Disconnect all the PCM connectors.
- Visually inspect for:
  - pushed out pins
  - corrosion
- Connect all the PCM connectors and make sure they seat correctly.
- Carry out the PCM self-test and verify the concern is still present.

**Is the concern still present?**

Yes	No
<p>INSTALL a new PCM. REFER to Section 2, <a href="#">Flash Electrically Erasable Programmable Read Only Memory (EEPROM)</a>, Programming the VID Block for a Replacement PCM.</p>	<p>The system is operating correctly at this time. The concern may have been caused by a loose or corroded connector.</p>

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