FAULT CODE 2265 - Electric Lift Pump for Engine Fuel Supply Circuit - Voltage Above Normal, or Shorted to High Source

TROUBLESHOOTING SUMMARY

⚠CAUTION⚠

To reduce the possibility of damaging a new ECM, all other active fault codes must be investigated before replacing the ECM.

⚠CAUTION⚠

To reduce the possibility of pin and harness damage, use the following test leads when taking a measurement: Part Number 3822758 - male Deutsch™/AMP™/Metri-Pack™ test lead and Part Number 3823993 - male Deutsch™ test lead.

STEPS		SPECIFICATIONS	SRT CODE
STEP 1:	**Check the fault codes.**		
STEP 1A:	Check for an inactive fault code.	Fault Code 2265 inactive?	
STEP 1B:	Lift pump voltage regulator check.	Is a lift pump voltage regulator installed?	
STEP 2:	**Check the electric fuel lift pump relay circuit.**		
STEP 2A:	Inspect the engine harness and electric fuel lift pump relay connector pins.	Dirty or damaged pins?	
STEP 2B:	Check for an open circuit in the electric fuel lift pump relay.	Less than 400 ohms?	
STEP 2C:	Check the electric fuel lift pump relay diagnostic supply voltage.	Greater than 6.0 VDC? (for 12 VDC system) Greater than 18.0 VDC? (for 24 VDC system)	
STEP 2D:	Check for an open circuit in the electric fuel lift pump relay return circuit.	Less than 10 ohms?	
STEP 3:	**Check the electric fuel lift pump.**		
STEP 3A:	Inspect the engine harness and electric fuel lift pump connector pins.	Dirty or damaged pins?	
STEP 3B:	Check for an open circuit in the electric fuel lift pump.	Less than 20 ohms?	
STEP 3C:	Check the electric fuel lift pump supply voltage and return circuit.	Greater than 6.0 VDC? (for 12 VDC system) Greater than 18.0 VDC? (for 24 VDC system)	
STEP 3D:	Check for an open circuit in the electric fuel lift pump relay return circuit.	Less than 10 ohms?	
STEP 4:	**Check the ECM and engine harness.**		
STEP 4A:	Inspect the ECM and engine harness connector pins.	Dirty or damaged pins?	
STEP 4B:	Check the ECM electric fuel lift pump diagnostic supply voltage.	Greater than 6.0 VDC? (for 12 VDC system) Greater than 18.0 VDC? (for 24 VDC system)	
STEP 4C:	Check for an open circuit in the engine harness.	Less than 10 ohms?	

STEP 4D:	**Check for a pin-to-pin short circuit in the engine harness.**	**Greater than 100k ohms?**
STEP 4E:	**Check for an inactive fault code.**	**Fault Code 2265 inactive?**

STEP 5: Clear the fault codes.

STEP 5A:	**Disable the fault code.**	**Fault Code 2265 inactive?**
STEP 5B:	**Clear the inactive fault codes.**	**All fault codes cleared?**

TROUBLESHOOTING STEP

STEP 1: Check the fault codes.

STEP 1A: Check for an inactive fault code.

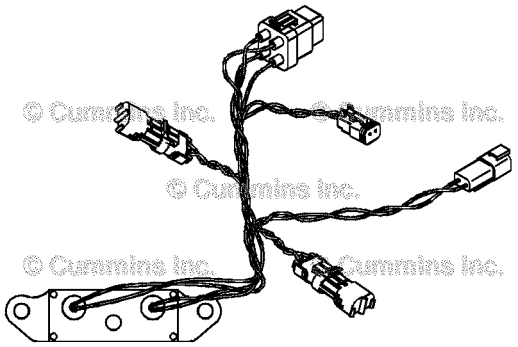
Condition:
- Turn keyswitch ON.
- Connect INSITE™ electronic service tool.

Action	Specification/Repair	Next Step
Check for an inactive fault code. • Use INSITE™ electronic service tool to read the fault codes.	Fault Code 2265 inactive? **YES**	Use the following procedure for an inactive or intermittent fault code. Refer to Procedure 019-362 in Section 19.
	Fault Code 2265 inactive? **NO**	1B

STEP 1B: Lift pump voltage regulator check.

Condition:
- Turn keyswitch OFF.

Action	Specification/Repair	Next Step
Check the lift pump voltage regulator. -	Is a lift pump voltage regulator installed? **YES**	2A
	Is a lift pump voltage regulator installed? **NO**	3A



STEP 2: Check the electric fuel lift pump relay circuit.

STEP 2A: Inspect the engine harness and electric fuel lift pump relay connector pins.

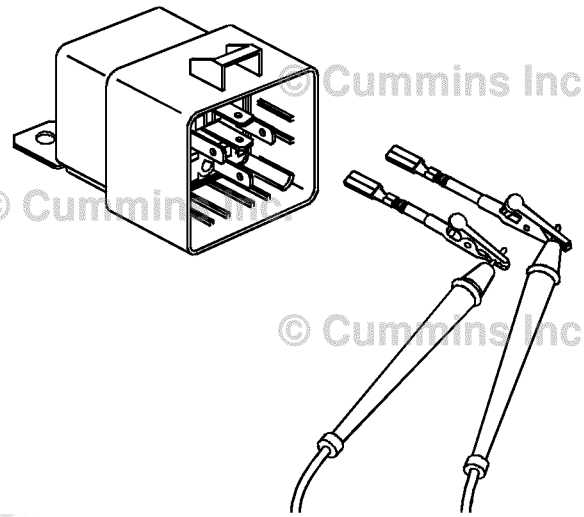
Condition:
- Turn keyswitch OFF.
- Disconnect the electric fuel lift pump relay from the electric fuel lift pump wiring harness.

Action	Specification/Repair	Next Step
Inspect the engine harness, electric fuel lift pump wiring harness, and relay connector pins for the following: • Loose connector • Corroded pins • Bent or broken pins • Pushed back or expanded pins • Moisture in or on the connector • Missing or damaged connector seals • Dirt or debris in or on the connector pins • Connector shell broken • Wire insulation damage • Damaged connector locking tab. Use the following procedure for general inspection techniques. Refer to Procedure 019-361 in Section 19.	Dirty or damaged pins? **YES** **Repair:** Clean the connector and pins. Repair the damaged harness, connector, or pins if possible.	5A
	Dirty or damaged pins? **NO**	2B

STEP 2B: Check for an open circuit in the electric fuel lift pump relay.

Condition:
- Turn keyswitch OFF.
- Disconnect the electric fuel lift pump relay from the electric fuel lift pump wiring harness.

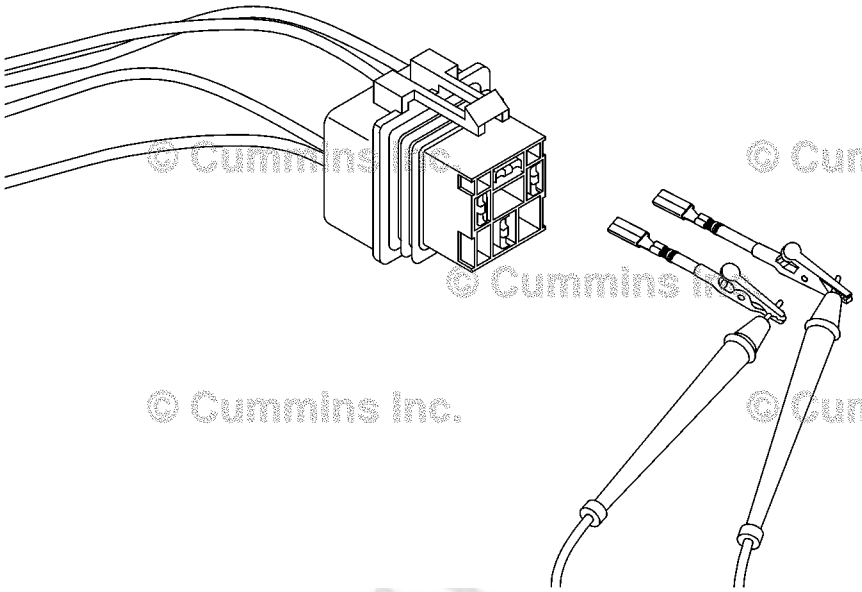
Action	Specification/Repair	Next Step
Check the electric fuel lift pump relay resistance. • Measure the resistance between the electric fuel lift pump relay SUPPLY pin (85) and the electric fuel lift pump relay RETURN pin (86). Use the following procedure for general resistance measurement techniques. Refer to Procedure 019-360 in Section 19.	Less than 400 ohms? **YES**	2C
	Less than 400 ohms? **NO** **Repair:** A damaged electric fuel lift pump relay has been detected. Replace the electric fuel lift pump relay. Refer to the OEM service manual.	5A



STEP 2C: Check the electric fuel lift pump relay diagnostic supply voltage.

Condition:
- Turn keyswitch OFF.
- Disconnect the electric fuel lift pump relay from the electric fuel lift pump wiring harness.
- Turn keyswitch ON.

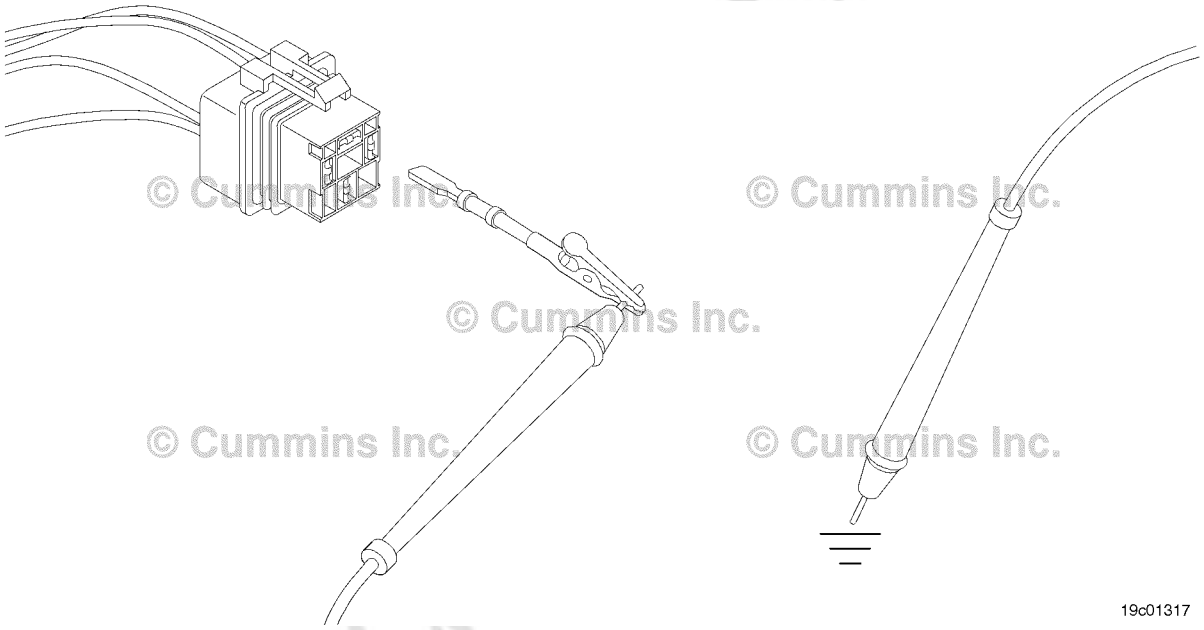
Action	Specification/Repair	Next Step
Check the supply voltage and return circuit. • Measure the voltage between the electric fuel lift pump SUPPLY pin (85) and the electric fuel lift pump RETURN pin (86) at the electric fuel lift pump relay connector.	Greater than 6.0 VDC? (for 12 VDC system) Greater than 18.0 VDC? (for 24 VDC system) **YES**	4D
	Greater than 6.0 VDC? (for 12 VDC system) Greater than 18.0 VDC? (for 24 VDC system) **NO**	2D



STEP 2D: Check for an open circuit in the electric fuel lift pump relay return circuit.

Condition:
- Turn keyswitch OFF.
- Disconnect the electric fuel lift pump relay from the electric fuel lift pump wiring harness.

Action	Specification/Repair	Next Step
Check for an open circuit. • Measure the resistance between the electric fuel lift pump relay RETURN pin (86) at the electric fuel lift pump relay connector to ground. Use the following procedure for general resistance measurement techniques. Refer to Procedure 019-360 in Section 19.	Less than 10 ohms? **YES**	4A
	Less than 10 ohms? **NO** **Repair:** An open circuit in the electric fuel lift pump relay circuit has been detected. Isolate the open circuit. Repair or replace the electric fuel lift pump wiring harness or the engine harness.	5A



STEP 3: Check the electric fuel lift pump.

STEP 3A: Inspect the engine harness and electric fuel lift pump connector pins.

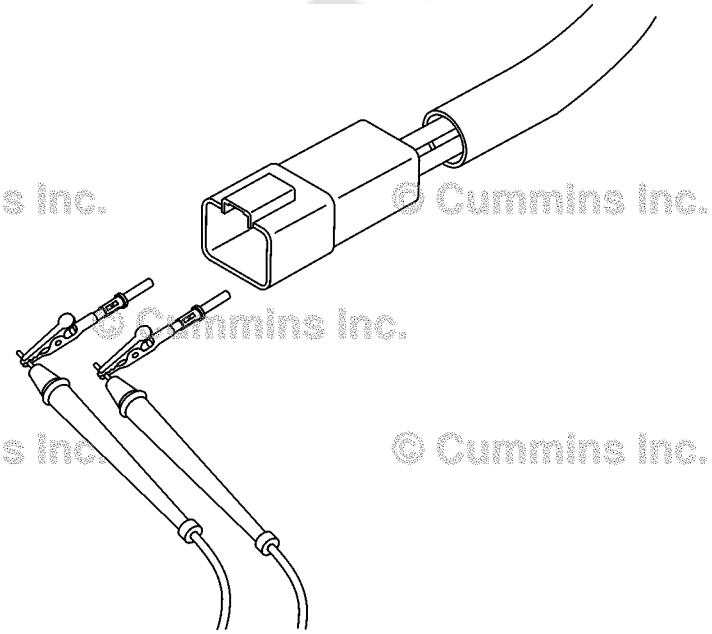
Condition:
- Turn keyswitch OFF.
- Disconnect the engine harness from the electric fuel lift pump.

Action	Specification/Repair	Next Step
Inspect the engine harness and electric fuel lift pump connector pins for the following: • Loose connector • Corroded pins • Bent or broken pins • Pushed back or expanded pins • Moisture in or on the connector • Missing or damaged connector seals • Dirt or debris in or on the connector pins • Connector shell broken • Wire insulation damage • Damaged connector locking tab. Use the following procedure for general inspection techniques. Refer to Procedure 019-361 in Section 19.	Dirty or damaged pins? **YES** **Repair:** Clean the connector and pins. Repair the damaged harness, connector, or pins if possible.	5A
	Dirty or damaged pins? **NO**	3B

STEP 3B: Check for an open circuit in the electric fuel lift pump.

Condition:
- Turn keyswitch OFF.
- Disconnect the engine harness from the electric fuel lift pump.

Action	Specification/Repair	Next Step
Check for an open circuit in the electric fuel lift pump. • Measure the resistance between the electric fuel lift pump SUPPLY and the electric fuel lift pump RETURN pins at the electric fuel lift pump connector. Use the following procedure for general resistance measurement techniques. Refer to Procedure 019-360 in Section 19.	Less than 20 ohms? **YES**	3C
	Less than 20 ohms? **NO** **Repair:** A damaged electric fuel lift pump has been detected. Replace the electric fuel lift pump. Use the following procedure in the ISC, QSC8.3, ISL, and QSL9 Series Engines Troubleshooting and Repair Manual, Bulletin 4021418 or the ISB Troubleshooting and Repair Manual, Bulletin 3666477. Refer to Procedure 005-045 in Section 5.	5A



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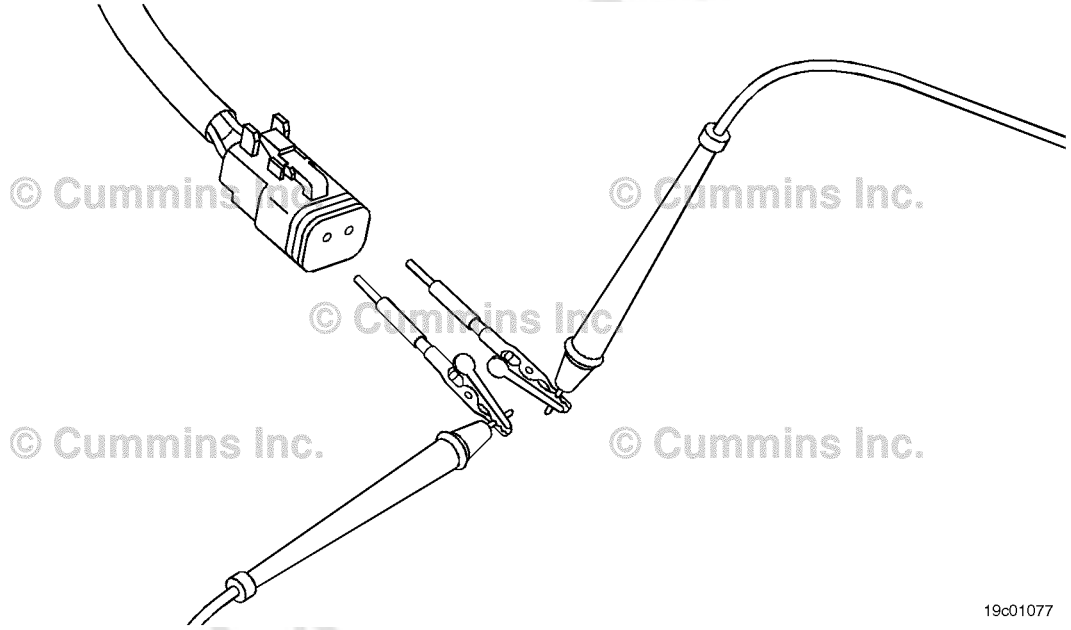
STEP 3C: Check the electric fuel lift pump supply voltage and return circuit.

Condition:
- Turn keyswitch OFF.
- Disconnect the engine harness from the electric fuel lift pump.
- Install the Deutsch™ 2-pin breakout tool, Part Number 3163531, in between the lift pump and the engine harness.
- Turn keyswitch ON.

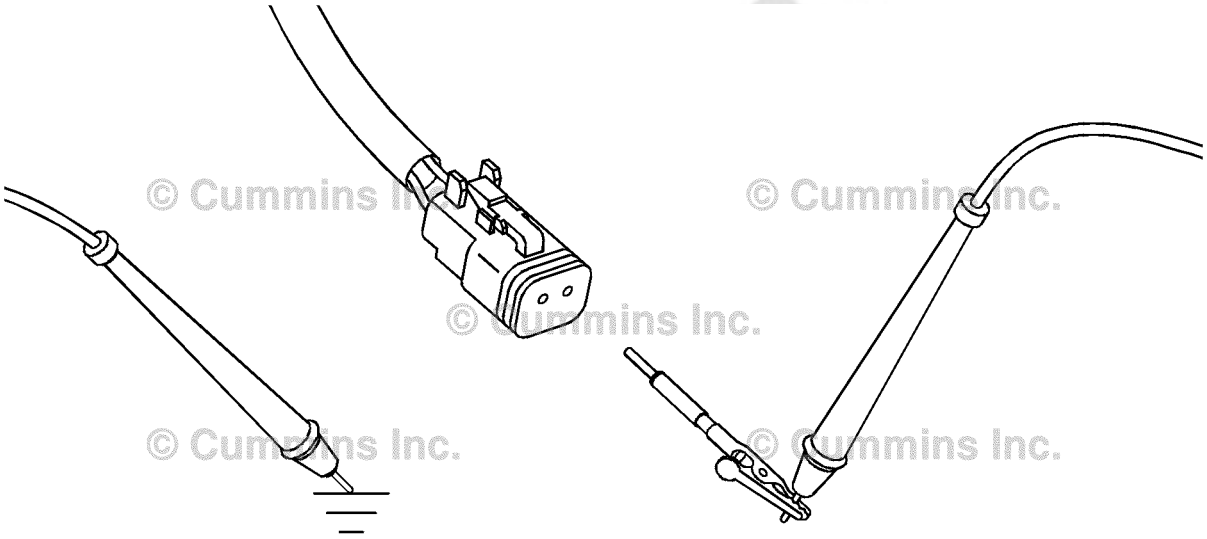
Action	Specification/Repair	Next Step
Check the supply voltage and return circuit. • Measure the voltage between the electric fuel lift pump SUPPLY pin and the electric fuel lift pump RETURN pin using the Deutsch™ 2-pin breakout tool.	Greater than 6.0 VDC? (for 12 VDC system) Greater than 18.0 VDC? (for 24 VDC system) **YES**	4D
	Greater than 6.0 VDC? (for 12 VDC system) Greater than 18.0 VDC? (for 24 VDC system) **NO**	3D



STEP 3D: Check for an open circuit in the electric fuel lift pump return circuit.

Condition:
- Turn keyswitch OFF.
- Disconnect the electric fuel lift pump from the engine harness.

Action	Specification/Repair	Next Step
Measure the resistance between the engine harness electric fuel lift pump RETURN pin and ground. Refer to the circuit diagram or wiring diagram for connector pin identification. Use the following procedure for general resistance measurement techniques. Refer to Procedure 019-360 in Section 19.	Less than 10 ohms? **YES**	4A
	Less than 10 ohms? **NO** **Repair:** An open circuit has been detected in the engine harness. Repair or replace the engine harness. Refer to Procedure 019-043 in Section 19.	5A



STEP 4: Check the ECM and engine harness.

STEP 4A: Inspect the ECM and engine harness connector pins.

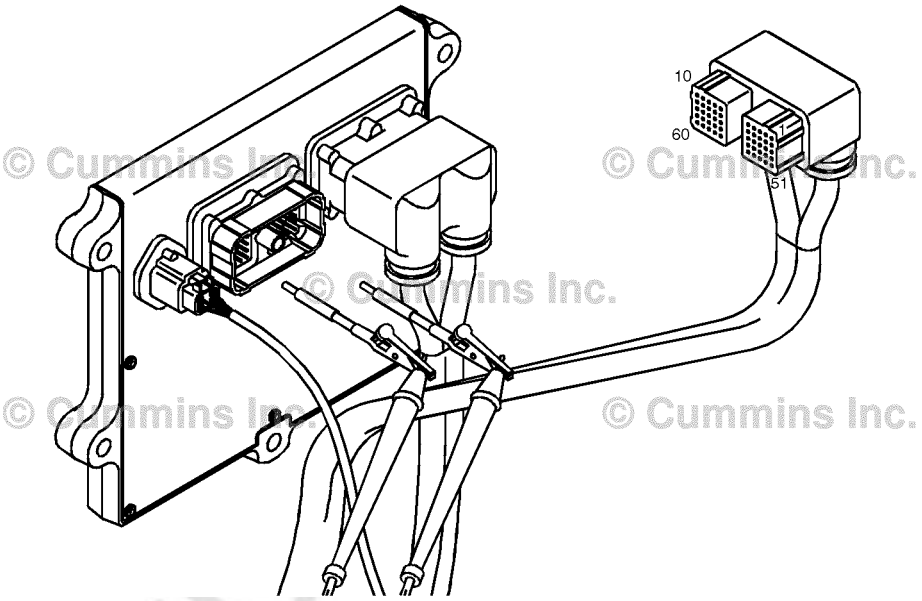
Condition:
- Turn keyswitch OFF.
- Disconnect the engine harness from the ECM.

Action	Specification/Repair	Next Step
Inspect the engine harness and ECM connector pins for the following: • Loose connector • Corroded pins • Bent or broken pins • Pushed back or expanded pins • Moisture in or on the connector • Missing or damaged connector seals • Dirt or debris in or on the connector pins • Connector shell broken • Wire insulation damage • Damaged connector locking tab. Use the following procedure for general inspection techniques. Refer to Procedure 019-361 in Section 19.	Dirty or damaged pins? **YES** **Repair:** A damaged connection has been detected in the ECM connector or engine harness connector. Clean the connector pins. Repair the damaged harness or connector pins if possible. Refer to Procedure 019-043 in Section 19.	5A
	Dirty or damaged pins? **NO**	4B

STEP 4B: Check the ECM electric fuel lift pump diagnostic supply voltage.

Condition:
- Turn keyswitch OFF.
- Disconnect the engine harness from the ECM.
- Turn keyswitch ON.

Action	Specification/Repair	Next Step
Check the supply voltage. • Measure the voltage between the electric fuel lift pump SUPPLY pin (1) and the electric fuel lift pump RETURN pin (11) at the engine harness ECM connector port. Refer to the circuit diagram or wiring diagram for connector pin identification.	Greater than 6.0 VDC? (for 12 VDC system) Greater than 18.0 VDC? (for 24 VDC system) **YES**	4C
	Greater than 6.0 VDC? (for 12 VDC system) Greater than 18.0 VDC? (for 24 VDC system) **NO** **Repair:** Replace the ECM. Refer to Procedure 019-031 in Section 19.	5A



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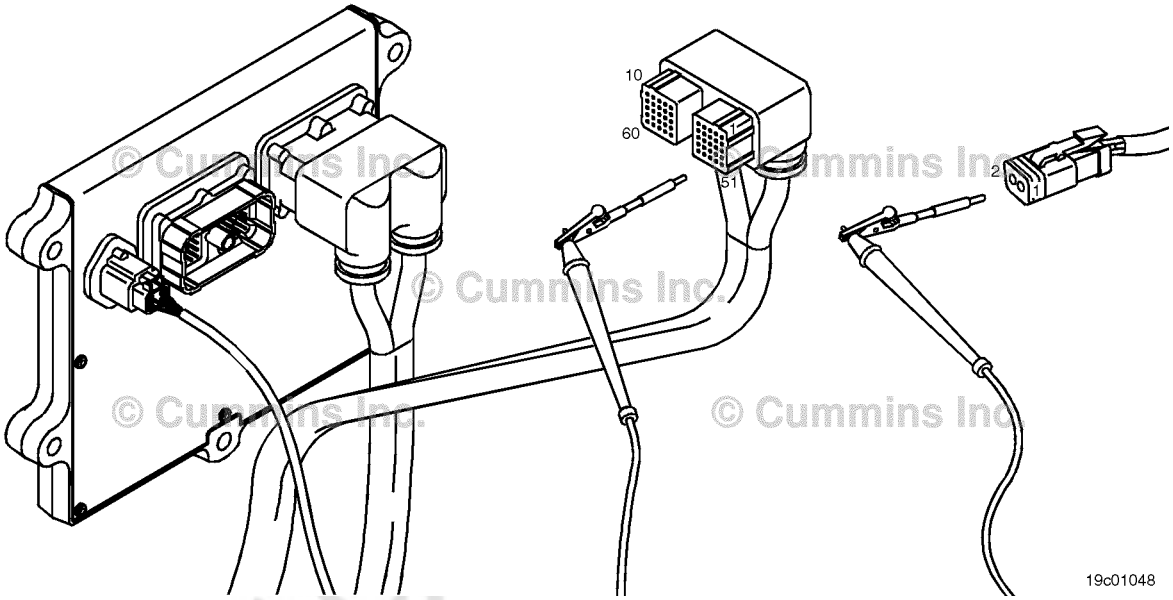
STEP 4C: Check for an open circuit in the engine harness.

Condition:
- Turn keyswitch OFF.
- Disconnect the engine harness from the ECM.
- Disconnect the electric fuel lift pump from the engine harness. For 24 VDC Automotive systems with the lift pump harness, disconnect the engine harness from the electric fuel lift pump wiring harness.

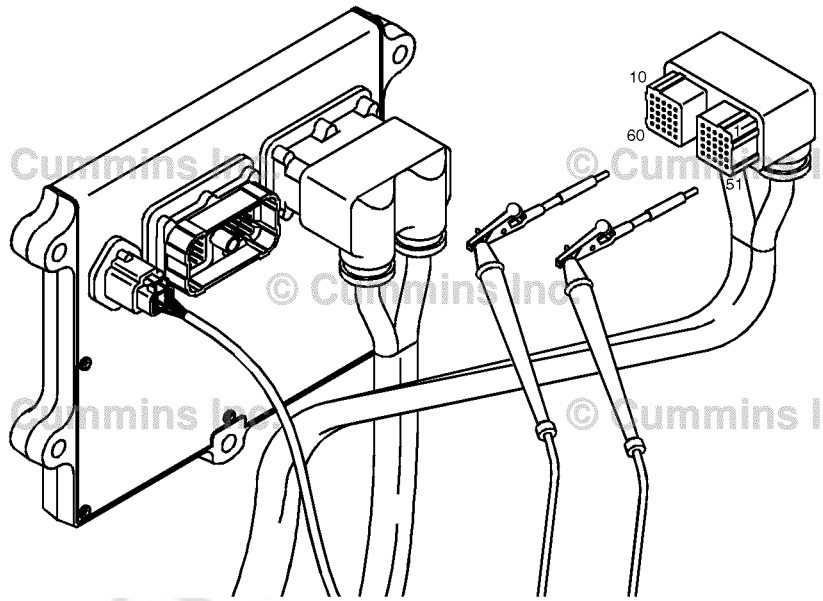
Action	Specification/Repair	Next Step
Check for an open circuit. • Measure the resistance between the electric fuel lift pump SUPPLY pin at the electric fuel lift pump connector and the electric fuel lift pump SUPPLY pin at the engine harness ECM connector. Refer to the circuit diagram or wiring diagram for connector pin identification. Use the following procedure for general resistance measurement techniques. Refer to Procedure 019-360 in Section 19.	Less than 10 ohms? **YES**	4D
	Less than 10 ohms? **NO** **Repair:** An open circuit has been detected in the engine harness. Repair or replace the engine harness. Refer to Procedure 019-043 in Section 19.	5A



STEP 4D: Check for a pin-to-pin short circuit in the engine harness.

Condition:
- Turn keyswitch OFF.
- Disconnect the engine harness from the ECM.
- Disconnect the electric fuel lift pump from the ECM. For 24 VDC Automotive systems with the lift pump harness, disconnect the electric fuel lift pump relay from the electric fuel lift pump wiring harness.

Action	Specification/Repair	Next Step
Check for a pin-to-pin short. • Measure the resistance between the electric fuel lift pump SUPPLY pin in the engine harness ECM connector and all other pins in the ECM connector. Refer to the circuit diagram or wiring diagram for connector pin identification. Use the following procedure for general resistance measurement techniques. Refer to Procedure 019-360 in Section 19.	Greater than 100k ohms? **YES**	4E
	Greater than 100k ohms? **NO** **Repair:** A pin-to-pin short circuit has been detected in the engine harness. Repair or replace the engine harness. If troubleshooting a 24 volt automotive system, isolate the interconnects. Refer to Procedure 019-043 in Section 19.	5A



STEP 4E: Check for an inactive fault code.

Condition:
- Connect all components.
- Turn keyswitch ON.
- Connect INSITE™ electronic service tool.

Action	Specification/Repair	Next Step
Check for the appropriate circuit response after 30 seconds. • Use INSITE™ electronic service tool to read the fault codes.	Fault Code 2265 inactive? **YES** **Repair:** None. The removal and installation of the connector corrected the problem.	5A
	Fault Code 2265 inactive? **NO** **Repair:** Replace the ECM. Refer to Procedure 019-031 in Section 19.	5A

STEP 5: Clear the fault codes.

STEP 5A: Disable the fault code.

Condition:
- Connect all components.
- Turn keyswitch ON.
- Connect INSITE™ electronic service tool.

Action	Specification/Repair	Next Step
Disable the fault code. • Start the engine and let it idle for 1 minute. • Use INSITE™ electronic service tool to verify that the fault code is inactive.	Fault Code 2265 inactive? **YES**	5B
	Fault Code 2265 inactive? **NO** **Repair:** Return to the troubleshooting steps or contact a Cummins® Authorized Repair Location if all steps have been completed and checked again.	1A

STEP 5B: Clear the inactive fault codes.

Condition:
- Connect all components.
- Turn keyswitch ON.

Action	Specification/Repair	Next Step
Clear the inactive fault codes. • Use INSITE™ electronic service tool to erase the inactive fault codes.	All fault codes cleared? **YES**	Repair complete
	All fault codes cleared? **NO** **Repair:** Troubleshoot any remaining active fault codes.	Appropriate troubleshooting steps