1 06 09-16

Service Information Bulletin

SUBJECT	DATE
SPN 174 (MCM) (GHG17), SPN 174 (MCM) (EPA07), SPN 174 (MCM) (EPA10), and SPN 174 (MCM) (EPA07)	June 2016

Additions, Revisions, or Updates

Publication Number / Title	Platform	Section Title	Change
DDC-SVC-MAN-0191	DD Platform	SPN 174/FMI 4 - GHG17	The diagnostic procedure has been updated.
DDC-SVC-MAN-0084		SPN 174/FMI 4 - GHG14	
		SPN 174/FMI 4 - EPA10	
		SPN 174/FMI 4 - EPA07	

DiagnosticLink users: Please update the troubleshooting guides in DiagnosticLink with this newest version. To update the tool troubleshooting guide, open DiagnosticLink and from the Help – Troubleshooting Guides menu, select the appropriate troubleshooting manual, then click Update.

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2 SPN 174/FMI 4 - GHG17

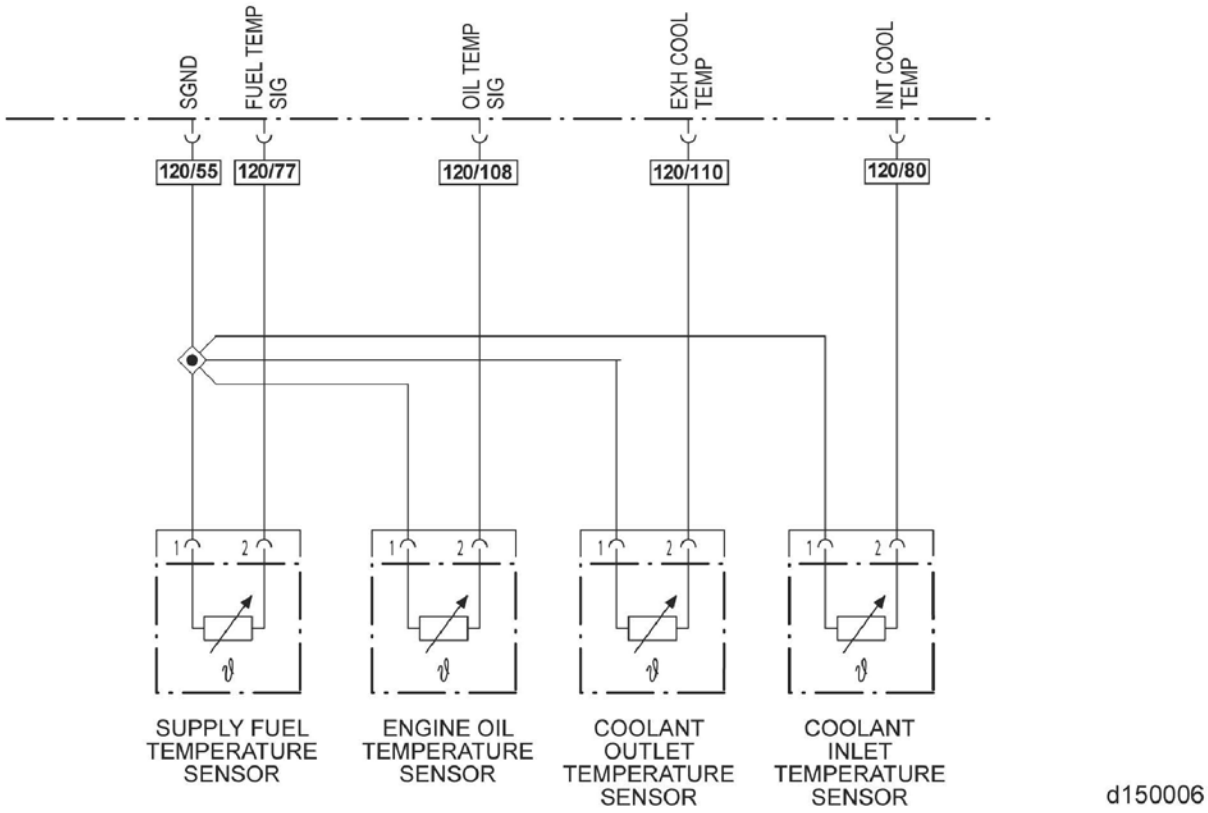
Supply Fuel Temperature Sensor Short Circuit to Ground

Table 1.

SPN 174/FMI 4	
Description	This Fault Code Sets when the Motor Control Module (MCM) Detects a Short to Ground on the Supply Fuel Temperature Circuit.
Monitored Parameter	Fuel Temperature Sensor
Typical Enabling Conditions	Always Enabled
Monitor Sequence	None
Execution Frequency	Always Enabled
Typical Duration	Two Seconds
Dash Lamps	MIL, CEL
Engine Reaction	
Verification	Engine Idle (One minute)

WARNING: ENGINE EXHAUST

To avoid injury from inhaling engine exhaust, always operate the engine in a well-ventilated area. Engine exhaust is toxic.



Check as follows:

1. Connect DiagnosticLink ®.

2. Disconnect and inspect the fuel temperature sensor electrical connector harness side. Is there any corrosion present?
    a. Yes; replace the fuel temperature sensor and the electrical connector. Refer to section "Removal of the Supply Fuel Temperature Sensor" and Technical Service letter 13 TS-16 (http://ddcsn-ddc.freightliner.com/cps/rde/xbcr/ddcsn/13TS16.pdf). Verify repair.
    b. No; Go to step 3.
3. Are any of the pins or the connector damaged?
    a. Yes; Go to step 4.
    b. No; Go to step 5.
4. Inspect the fuel temperature sensor electrical connector components side. Are any of the pins or the connector damaged?
    a. Yes; replace the fuel temperature sensor and the electrical connector. Refer to section "Removal of the Supply Fuel Temperature Sensor" and Technical Service letter 13 TS-16 (http://ddcsn-ddc.freightliner.com/cps/rde/xbcr/ddcsn/13TS16.pdf). Verify repair.
    b. No; replace the fuel temperature sensor electrical connector. Refer to section "Removal of the Supply Fuel Temperature Sensor". Verify repair.
5. With the fuel temperature sensor disconnected, turn the ignition ON (Key ON, Engine OFF).
6. Is fault code SPN 175/FMI 4 still active?
    a. Yes; Go to step 7.
    b. No; replace the fuel temperature sensor. Refer to section "Removal of the Supply Fuel Temperature Sensor". Verify repair.
7. Turn the ignition OFF.
8. Disconnect and inspect the MCM 120-pin electrical connector harness side. Is there corrosion present?
    a. Yes; replace the MCM and the engine harness. Refer to section "Removal of the Motor Control Module" and Refer to section "Removal of the Engine Wiring Harness" . Verify repair.
    b. No; Go to step 9.
9. Are any of the pins or the connector damaged?
    a. Yes; Go to step 10.
    b. No; Go to step 11.
10. Inspect the MCM 120-pin electrical connector component side. Are any of the pins or the connector damaged?
    a. Yes; replace the MCM and the electrical connector. Refer to section "Removal of the Motor Control Module" and Refer to section "Removal of the Engine Wiring Harness". Verify repair.
    b. No; replace the engine harness. Refer to section "Removal of the Engine Wiring Harness". Verify repair.
11. Measure the resistance between pin 2 of the supply fuel temperature sensor electrical connector harness side and pin 77 of the MCM 120-pin electrical connector harness side. Is the resistance less than 10k ohms?
    a. Yes; repair the circuit between pin 2 of the supply fuel temperature sensor electrical connector harness side and pin 77 of the MCM 120-pin electrical connector harness side.
    b. No; replace the MCM. Refer to section "Removal of the Motor Control Module". Verify repair.

3 SPN 174/FMI 4 - GHG14

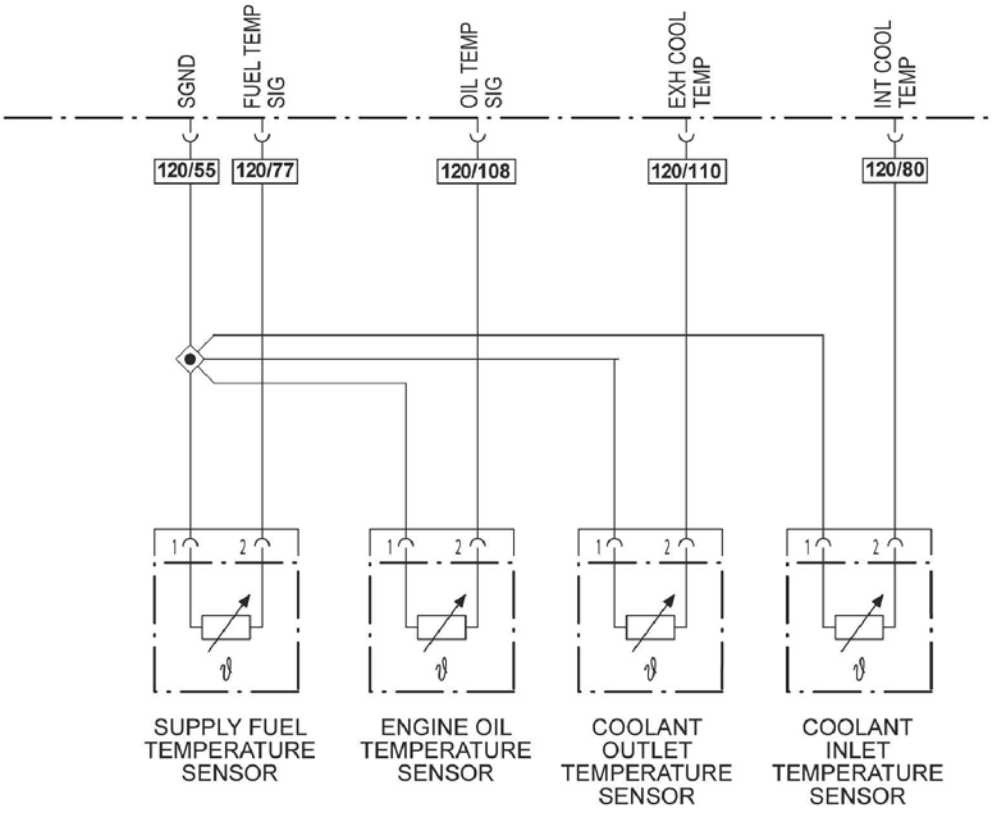
Supply Fuel Temperature Sensor Short Circuit to Ground

Table 2.

SPN 174/FMI 4	
Description	This Fault Code Sets when the Motor Control Module (MCM) Detects a Short to Ground on the Supply Fuel Temperature Circuit.
Monitored Parameter	Fuel Temperature Sensor
Typical Enabling Conditions	Always Enabled
Monitor Sequence	None
Execution Frequency	Always Enabled
Typical Duration	Two Seconds
Dash Lamps	MIL, CEL
Engine Reaction	
Verification	Engine Idle (One minute)

WARNING: ENGINE EXHAUST

To avoid injury from inhaling engine exhaust, always operate the engine in a well-ventilated area. Engine exhaust is toxic.



Check as follows:

1. Connect DiagnosticLink ®.
2. Disconnect and inspect the fuel temperature sensor electrical connector harness side. Is there any corrosion present?
    a. Yes; replace the fuel temperature sensor and the electrical connector. Refer to section "Removal of the Supply Fuel Temperature Sensor – Two-Filter Fuel System" and Technical Service letter 13 TS-16 (http://ddcsn-ddc.freightliner.com/cps/rde/xbcr/ddcsn/13TS16.pdf). Verify repair.
    b. No; Go to step 3.
3. Are any of the pins or the connector damaged?
    a. Yes; Go to step 4.
    b. No; Go to step 5.
4. Inspect the fuel temperature sensor electrical connector components side. Are any of the pins or the connector damaged?
    a. Yes; replace the fuel temperature sensor and the electrical connector. Refer to section "Removal of the Supply Fuel Temperature Sensor – Two-Filter Fuel System" and Technical Service letter 13 TS-16 (http://ddcsn-ddc.freightliner.com/cps/rde/xbcr/ddcsn/13TS16.pdf). Verify repair.
    b. No; replace the fuel temperature sensor electrical connector. Refer to section "Removal of the Supply Fuel Temperature Sensor – Two-Filter Fuel System". Verify repair.
5. Turn the ignition ON (Key ON, Engine OFF).
6. Is fault code SPN 175/FMI 4 still active?
    a. Yes; Go to step 7.
    b. No; replace the fuel temperature sensor. Refer to section "Removal of the Supply Fuel Temperature Sensor – Two-Filter Fuel System". Verify repair.
7. Turn the ignition OFF.
8. Disconnect and inspect the MCM 120-pin electrical connector harness side. Is there corrosion present?
    a. Yes; replace the MCM and the engine harness. Refer to section "Removal of the Motor Control Module". Verify repair.
    b. No; Go to step 9.
9. Are any of the pins or the connector damaged?
    a. Yes; Go to step 10.
    b. No; Go to step 11.
10. Inspect the MCM 120-pin electrical connector component side. Are any of the pins or the connector damaged?
    a. Yes; replace the MCM and the electrical connector. Refer to section "Removal of the Motor Control Module". Verify repair.
    b. No; replace the engine harness.
11. Measure the resistance between pin 2 of the supply fuel temperature sensor electrical connector harness side and pin 77 of the MCM 120-pin electrical connector harness side. Is the resistance less than 10k ohms?
    a. Yes; repair the circuit between pin 2 of the supply fuel temperature sensor electrical connector harness side and pin 77 of the MCM 120-pin electrical connector harness side.
    b. No; replace the MCM. Refer to section "Removal of the Motor Control Module". Verify repair.

4 SPN 174/FMI 4 - EPA10

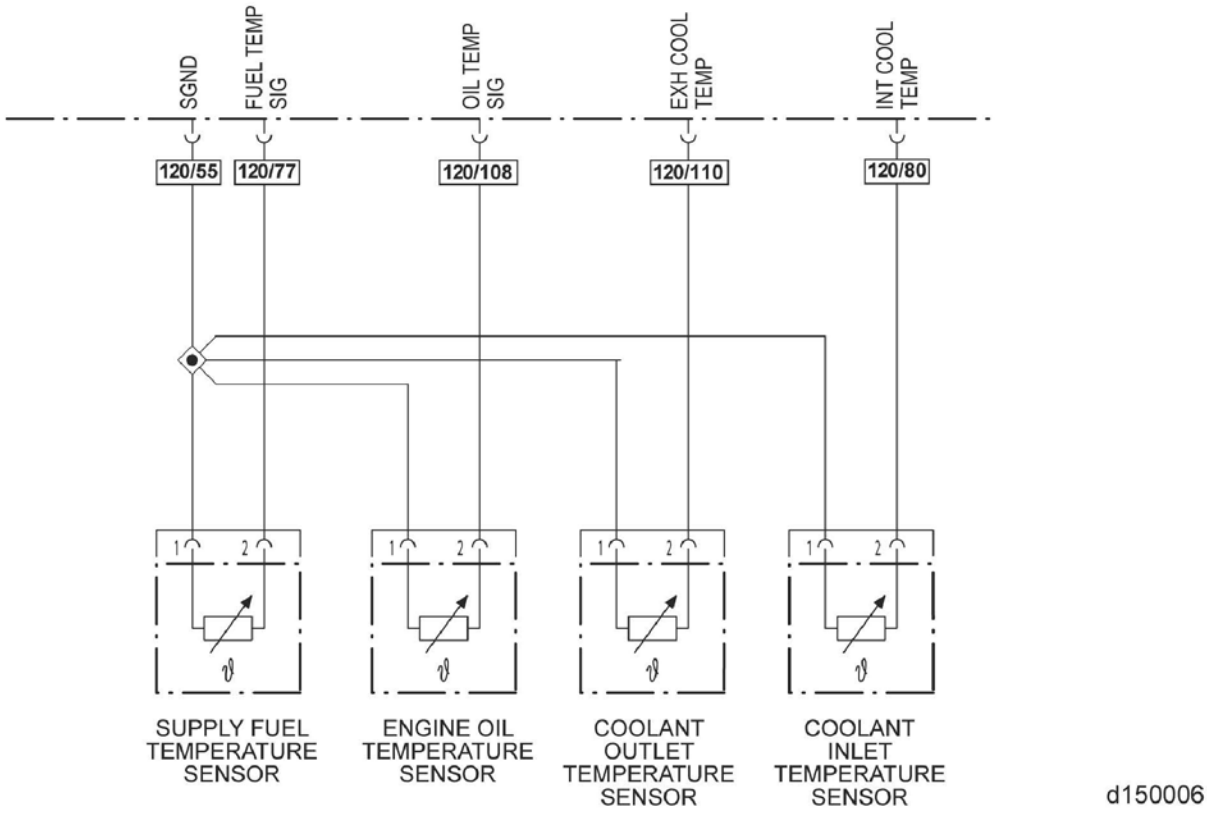
Supply Fuel Temperature Sensor Short Circuit to Ground

Table 3.

SPN 174/FMI 4	
Description	This Fault Code Sets when the Motor Control Module (MCM) Detects a Short to Ground on the Supply Fuel Temperature Circuit.
Monitored Parameter	Fuel Temperature Sensor
Typical Enabling Conditions	Always Enabled
Monitor Sequence	None
Execution Frequency	Always Enabled
Typical Duration	Two Seconds
Dash Lamps	MIL, CEL
Engine Reaction	
Verification	Engine Idle (One Minute)

WARNING: ENGINE EXHAUST

To avoid injury from inhaling engine exhaust, always operate the engine in a well-ventilated area. Engine exhaust is toxic.



Check as follows:

1. Connect DiagnosticLink ®.

2. Disconnect and inspect the fuel temperature sensor electrical connector harness side. Is there any corrosion present?
    a. Yes; replace the fuel temperature sensor and the electrical connector.
    Refer to section "Removal of the Supply Fuel Temperature Sensor – Two-Filter Fuel System" for the two filter system, and Technical Service letter 13 TS-16 (http://ddcsn-ddc.freightliner.com/cps/rde/xbcr/ddcsn/13TS16.pdf). Verify repair.
    Refer to section "Removal of the Supply Fuel Temperature Sensor – Three-Filter Fuel System" for the three filter system, and Technical Service letter 13 TS-16 (http://ddcsn-ddc.freightliner.com/cps/rde/xbcr/ddcsn/13TS16.pdf). Verify repair.
    b. No; Go to step 3.
3. Are any of the pins or the connector damaged?
    a. Yes; Go to step 4.
    b. No; Go to step 5.
4. Inspect the fuel temperature sensor electrical connector components side. Are any of the pins or the connector damaged?
    a. Yes; replace the fuel temperature sensor and the electrical connector.
    Refer to section "Removal of the Supply Fuel Temperature Sensor – Two-Filter Fuel System" for the two filter system, and Technical Service letter 13 TS-16 (http://ddcsn-ddc.freightliner.com/cps/rde/xbcr/ddcsn/13TS16.pdf). Verify repair.
    Refer to section "Removal of the Supply Fuel Temperature Sensor – Three-Filter Fuel System" for the three filter system, and Technical Service letter 13 TS-16 (http://ddcsn-ddc.freightliner.com/cps/rde/xbcr/ddcsn/13TS16.pdf). Verify repair.
    b. No; replace the fuel temperature sensor electrical connector. Refer to Technical Service Letter 13 TS-16 (http://ddcsn-ddc.freightliner.com/cps/rde/xbcr/ddcsn/13TS16.pdf). Verify repair.
5. Turn the ignition ON (Key ON, Engine OFF).
6. Is fault code SPN 175/FMI 4 still active?
    a. Yes; Go to step 7.
    b. No; replace the fuel temperature sensor. Refer to section "Removal of the Supply Fuel Temperature Sensor – Two-Filter Fuel System", or Refer to section "Removal of the Supply Fuel Temperature Sensor – Three-Filter Fuel System" for the three filter system. Verify repair.
7. Turn the ignition OFF.
8. Disconnect and inspect the MCM 120-pin electrical connector harness side. Is there corrosion present?
    a. Yes; replace the MCM and the engine harness. Refer to section "Removal of the Motor Control Module". Verify repair.
    b. No; Go to step 9.
9. Are any of the pins or the connector damaged?
    a. Yes; Go to step 10.
    b. No; Go to step 11.
10. Inspect the MCM 120-pin electrical connector component side. Are any of the pins or the connector damaged?
    a. Yes; replace the MCM and the electrical connector. Refer to section "Removal of the Motor Control Module". Verify repair.
    b. No; replace the engine harness.
11. Measure the resistance between pin 2 of the supply fuel temperature sensor electrical connector harness side and pin 77 of the MCM 120-pin electrical connector harness side. Is the resistance less than 10k ohms?
    a. Yes; repair the circuit between pin 2 of the supply fuel temperature sensor electrical connector harness side and pin 77 of the MCM 120-pin electrical connector harness side.
    b. No; replace the MCM. Refer to section "Removal of the Motor Control Module". Verify repair.

5 SPN 174/FMI 4 - EPA07

Supply Fuel Temperature Sensor Short Circuit to Ground

Table 4.

SPN 174/FMI 4	
Description	This Fault Code Sets when the Motor Control Module (MCM) Detects a Short to Ground on the Supply Fuel Temperature Circuit.
Monitored Parameter	Fuel Temperature Sensor
Typical Enabling Conditions	Always Enabled
Monitor Sequence	None
Execution Frequency	Always Enabled
Typical Duration	Two Seconds
Dash Lamps	MIL, CEL
Engine Reaction	
Verification	Engine Idle (One Minute)

WARNING: ENGINE EXHAUST

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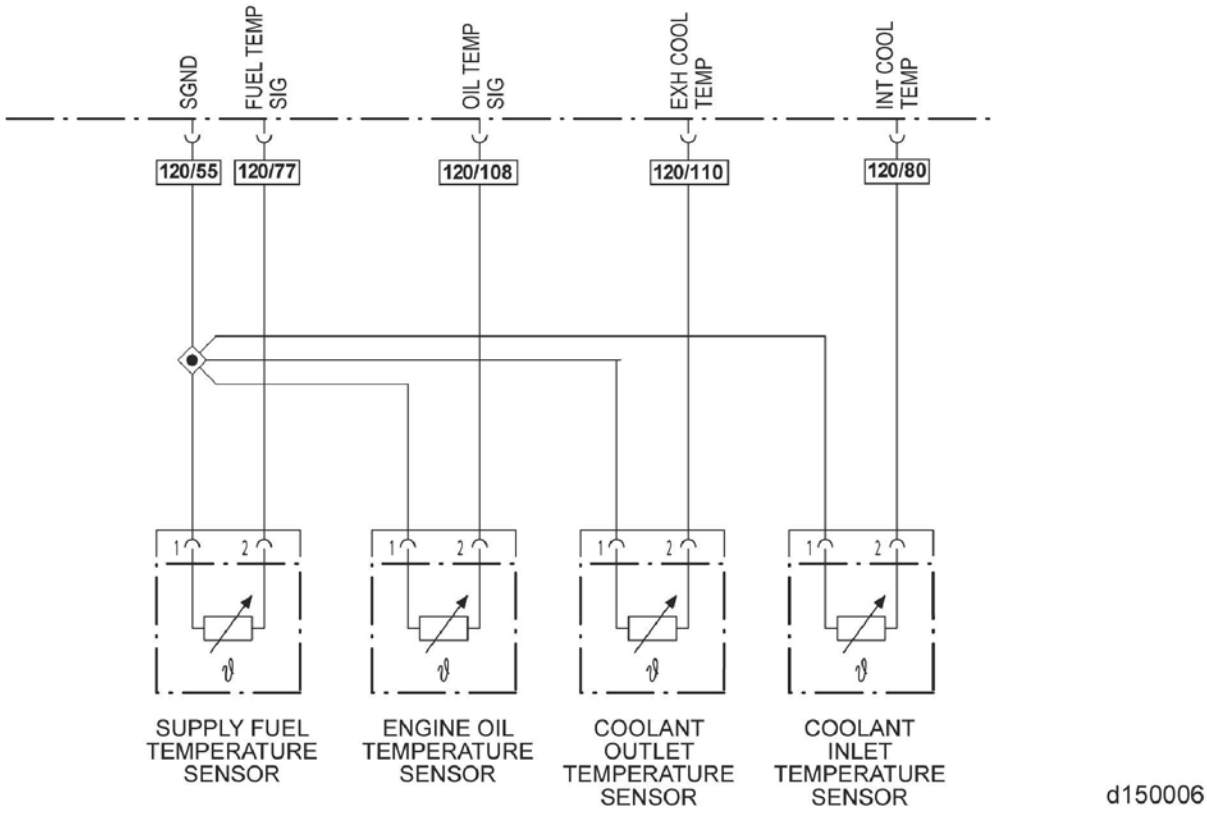

Check as follows:

1. Connect DiagnosticLink ®.

2. Disconnect and inspect the fuel temperature sensor electrical connector harness side. Is there any corrosion present?
    a. Yes; replace the fuel temperature sensor and the electrical connector. Refer to section "Removal of the Supply Fuel Temperature Sensor – Three-Filter Fuel System" and Technical Service letter 13 TS-16 (http://ddcsn-ddc.freightliner.com/cps/rde/xbcr/ddcsn/13TS16.pdf). Verify repair.
    b. No; Go to step 3.
3. Are any of the pins or the connector damaged?
    a. Yes; Go to step 4.
    b. No; Go to step 5.
4. Inspect the fuel temperature sensor electrical connector components side. Are any of the pins or the connector damaged?
    a. Yes; replace the fuel temperature sensor and the electrical connector. Refer to section "Removal of the Supply Fuel Temperature Sensor – Three-Filter Fuel System" and Technical Service letter 13 TS-16 (http://ddcsn-ddc.freightliner.com/cps/rde/xbcr/ddcsn/13TS16.pdf). Verify repair.
    b. No; replace the fuel temperature sensor electrical connector. Refer to Technical Service Letter 13 TS-16 (http://ddcsn-ddc.freightliner.com/cps/rde/xbcr/ddcsn/13TS16.pdf). Verify repair.
5. Turn the ignition ON (Key ON, Engine OFF).
6. Is fault code SPN 175/FMI 4 still active?
    a. Yes; Go to step 7.
    b. No; replace the fuel temperature sensor. Refer to section "Removal of the Supply Fuel Temperature Sensor – Three-Filter Fuel System". Verify repair.
7. Turn the ignition OFF.
8. Disconnect and inspect the MCM 120-pin electrical connector harness side. Is there corrosion present?
    a. Yes; replace the MCM and the engine harness. Refer to section "Removal of the Motor Control Module". Verify repair.
    b. No; Go to step 9.
9. Are any of the pins or the connector damaged?
    a. Yes; Go to step 10.
    b. No; Go to step 11.
10. Inspect the MCM 120-pin electrical connector component side. Are any of the pins or the connector damaged?
    a. Yes; replace the MCM and the electrical connector. Refer to section "Removal of the Motor Control Module". Verify repair.
    b. No; replace the engine harness.
11. Measure the resistance between pin 2 of the supply fuel temperature sensor electrical connector harness side and pin 77 of the MCM 120-pin electrical connector harness side. Is the resistance less than 10k ohms?
    a. Yes; repair the circuit between pin 2 of the supply fuel temperature sensor electrical connector harness side and pin 77 of the MCM 120-pin electrical connector harness side.
    b. No; replace the MCM. Refer to section "Removal of the Motor Control Module". Verify repair.

