1 06 11-16

Service Information Bulletin

SUBJECT	DATE
SPN 110 (MCM) (GHG17) and SPN 110 (MCM) (EPA07;EPA10;GHG14)	June 2016

Additions, Revisions, or Updates

Publication Number / Title	Platform	Section Title	Change
DDC-SVC-MAN-0191	DD Platform	SPN 110/FMI 4 - GHG17	The diagnostics procedure has been updated.
DDC-SVC-MAN-0084		SPN 110/FMI 4 - EPA07- EPA10 - GHG14	

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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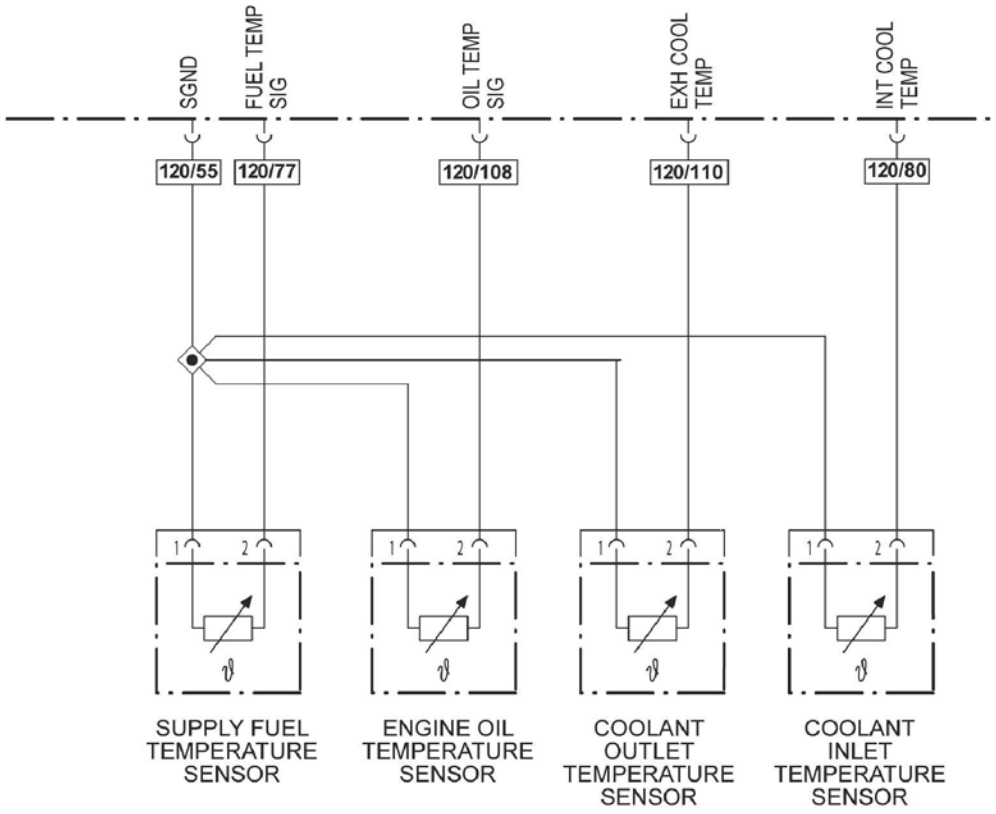
2 SPN 110/FMI 4 - GHG17

Engine Coolant Outlet Temperature Circuit Failed Low

Table 1.

SPN 110/FMI 4	
Description	This Fault Code Sets when the Motor Control Module (MCM) Detects a Short to Ground on the Engine Coolant Temperature Sensor Circuit.
Monitored Parameter	Engine Coolant Outlet 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:

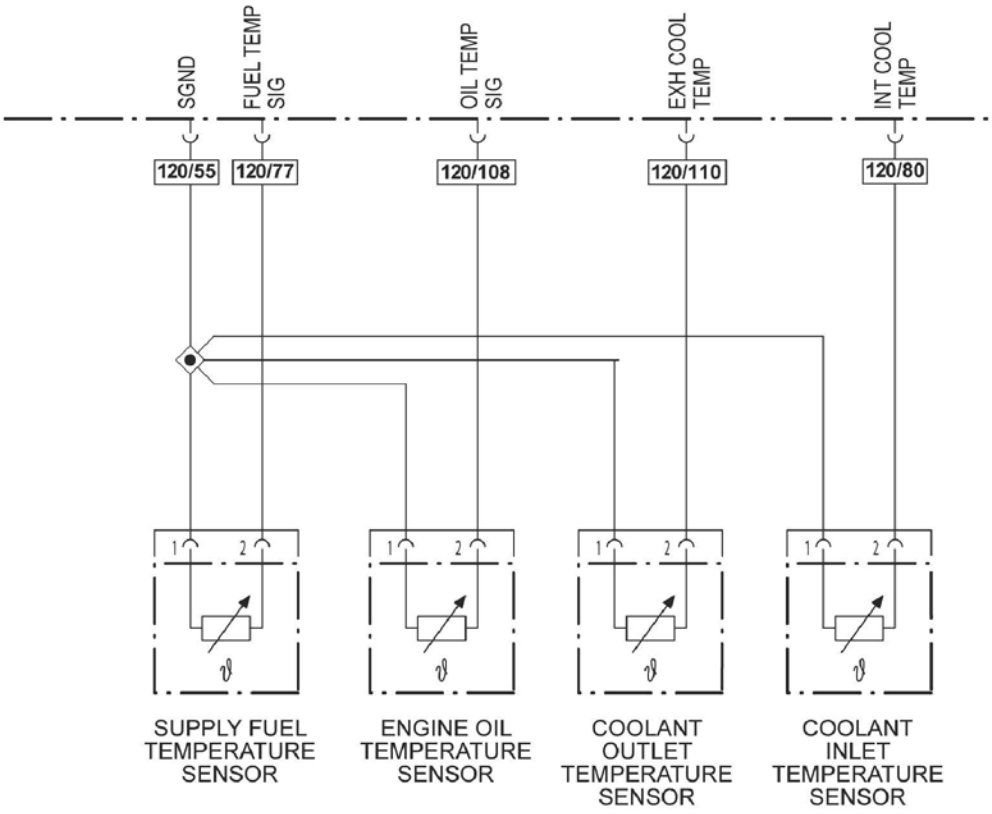
1. Connect DiagnosticLink ®.
2. Disconnect and inspect the engine coolant electrical connector harness side. Is there corrosion present?
    a. Yes; replace the engine coolant temperature sensor and the electrical connector. Refer to section "Removal of the Engine Coolant Outlet Temperature Sensor" and 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 engine coolant outlet electrical connector component side. Are any of the pins or the connector damaged?
    a. Yes; replace the engine coolant temperature sensor and the electrical connector. Refer to section "Removal of the Engine Coolant Outlet 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 engine coolant outlet 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 110/FMI 4 still active?
    a. Yes; Go to step 7.
    b. No; replace the engine coolant temperature sensor. Refer to section "Removal of the Engine Coolant Outlet Temperature Sensor". Verify repair.
7. Turn the ignition OFF.
8. Disconnect and inspect 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 engine harness. Refer to section "Removal of the Motor Control Module". Verify repair.
    b. No; replace the engine harness. Verify repair.
11. Measure the resistance between pin 2 of the engine coolant electrical connector harness side and pin 110 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 engine coolant electrical connector harness side and pin 110 of the MCM 120-pin electrical connector harness side. Verify repair.
    b. No; replace the MCM. Refer to section "Removal of the Motor Control Module". Verify repair.

3 SPN 110/FMI 4 - EPA07 - EPA10 - GHG14

Engine Coolant Outlet Temperature Circuit Failed Low

Table 2.

SPN 110/FMI 4	
Description	This fault Code Sets when the Motor Control Module (MCM) Detects a Short to Ground on the Engine Coolant Temperature Sensor Circuit.
Monitored Parameter	Engine Coolant Outlet 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 engine coolant electrical connector harness side. Is there corrosion present?
    a. Yes; replace the engine coolant temperature sensor and the electrical connector. Refer to section "Removal of Engine Coolant Outlet 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 engine coolant outlet electrical connector component side. Are any of the pins or the connector damaged?
    a. Yes; replace the engine coolant temperature sensor and the electrical connector. Refer to section "Removal of Engine Coolant Outlet 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 engine coolant outlet 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 110/FMI 4 still active?
    a. Yes; Go to step 7.
    b. No; replace the engine coolant temperature sensor. Refer to section "Removal of Engine Coolant Outlet Temperature Sensor". Verify repair.
7. Turn the ignition OFF.
8. Disconnect and inspect 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 engine harness. Refer to section "Removal of the Motor Control Module". Verify repair.
    b. No; replace the engine harness. Verify repair.
11. Measure the resistance between pin 2 of the engine coolant electrical connector harness side and pin 110 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 engine coolant electrical connector harness side and pin 110 of the MCM 120-pin electrical connector harness side. Verify repair.
    b. No; replace the MCM. Refer to section "Removal of the Motor Control Module". Verify repair.

