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## Service Information Bulletin

SUBJECT	DATE
SPN 171/FMI 3, 4 (CPC)(GHG14)	July 2014

### Additions, Revisions, or Updates

Publication Number / Title	Platform	Section Title	Change
DDC-SVC-MAN-0084	DD Platform	SPN 171/FMI 3, 4 - GHG14	These are new sections.



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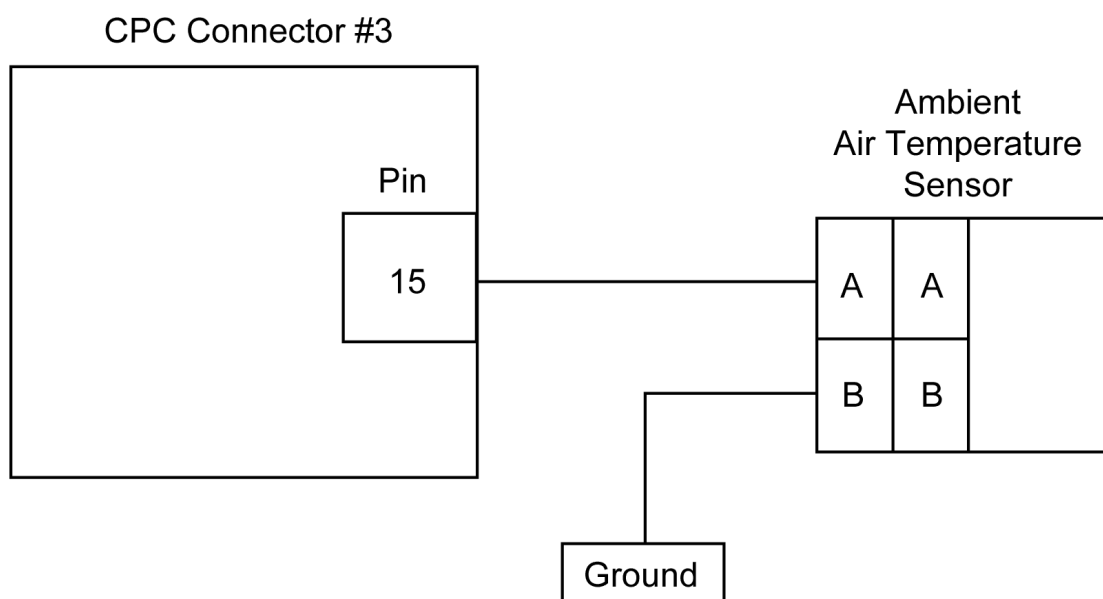
## 2 SPN 171/FMI 3 - GHG14

Ambient Temperature Sensor Failed High

**Table 1.**

SPN 171/FMI 3	
Description	Ambient Temperature input is shorted high or open.
Monitored Parameter	Ambient Temperature
Typical Enabling Conditions	Always Enabled
Monitor Sequence	None
Execution Frequency	Always Enabled
Typical Duration	2 Seconds
Dash Lamps	CEL
Engine Reaction	None
Verification	Key Cycle - 5 Minutes off - Engine Idle (2 minute)

Check as follows:



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1. Connect DiagnosticLink<sup>®</sup>.
2. Has the CPC been recently reprogrammed?
  - a. Yes; Check for proper configuration of the CPC against the server information. To verify repair, Go to step 3.
  - b. No; Go to step 4.
3. Clear fault codes. Turn ignition OFF and disconnect DiagnosticLink. Wait five minutes for all modules to power down. Verify repair.
4. Disconnect the CPC #3 21-pin connector.

5. Inspect the CPC #3 harness connector for signs of damaged, bent, spread, corroded or unseated (pushed out) pins and signs of moisture in the connector or wire damage near the connector. Is any damage found?
  - a. Yes; repair as necessary. Verify repairs.
  - b. No; Go to step 6.
6. Turn the ignition ON (key ON, engine OFF).
7. Measure the voltage between pin 15 of the CPC connector #3 harness side and ground. Is any voltage present?
  - a. Yes; repair the short to power on the ambient air sensor harness. Refer to Original Equipment Manufacturer (OEM) literature for schematic information. Verify repairs.
  - b. No; Go to step 8.
8. Turn ignition OFF.
9. Disconnect the ambient air temperature sensor. Refer to Original Equipment Manufacturer (OEM) literature.
10. Inspect the ambient air temperature sensor harness connector for signs of damaged, bent, spread, corroded or unseated (pushed out) pins and signs of moisture in the connector or wire damage near the connector. Is any damage found?
  - a. Yes; repair as necessary. Verify repairs.
  - b. No; Go to step 11.
11. Measure the resistance between pin A of the ambient air sensor connector, harness side and pin 15 of the CPC #3 connector harness side. Is the resistance less than 5 ohms?
  - a. Yes; Go to step 12.
  - b. No; repair the open wire between pin A of the ambient air sensor connector and pin 15 of the CPC #3 connector.
12. Measure the resistance between pin B of the ambient air sensor connector, harness side and ground. Is the resistance less than 5 ohms?
  - a. Yes; replace the ambient air temperature sensor. Refer to Original Equipment Manufacturer (OEM) literature. Go to step 13. to verify repairs.
  - b. No; repair the open wire between pin B of the ambient air sensor connector and ground.
13. Clear fault codes. Turn ignition OFF and disconnect DiagnosticLink. Wait five minutes for all modules to power down. Verify repair. Does fault code return?
  - a. Yes; replace CPC. Verify repairs.
  - b. No; release vehicle.

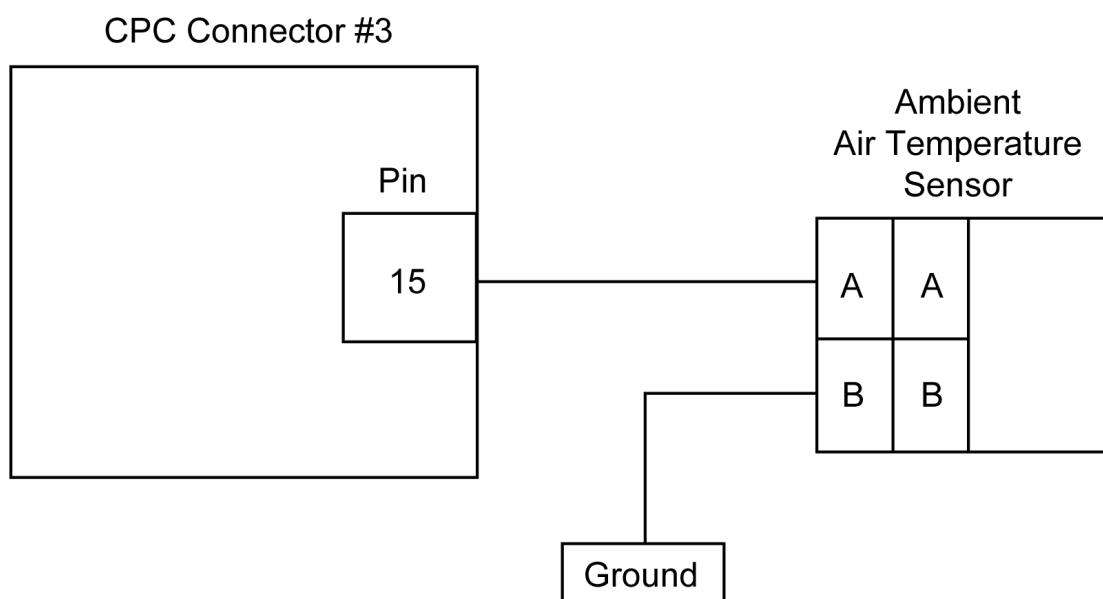
### 3 SPN 171/FMI 4 - GHG14

Ambient Temperature Sensor Failed Low

**Table 2.**

SPN 171/FMI 4	
Description	Ambient Temperature input is shorted to ground.
Monitored Parameter	Ambient Temperature
Typical Enabling Conditions	Always Enabled
Monitor Sequence	None
Execution Frequency	Always Enabled
Typical Duration	2 Seconds
Dash Lamps	CEL
Engine Reaction	None
Verification	Key Cycle - 5 Minutes off - Engine Idle (2 minute)

Check as follows:



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1. Disconnect the ambient air temperature sensor. Refer to Original Equipment Manufacturer (OEM) literature.
2. Inspect the ambient air temperature sensor harness connector for signs of damaged, bent, spread, corroded or unseated (pushed out) pins and signs of moisture in the connector or wire damage near the connector. Is any damage found?
  - a. Yes; repair as necessary. Verify repairs.
  - b. No; Go to step 3.
3. Turn the ignition ON (key ON, engine OFF).
4. Using DiagnosticLink<sup>®</sup>, monitor fault code SPN 171/ FMI 4 with the ambient air sensor disconnected. Does the fault code change or go inactive?

- a. Yes; replace the ambient air temperature sensor. Refer to Original Equipment Manufacturer (OEM) literature. Verify repair.
  - b. No; Go to step 5.
5. Turn the ignition OFF.
6. Disconnect the CPC #3 21-pin connector. Refer to Original Equipment Manufacturer (OEM) literature for schematic information.
7. Inspect the CPC #3 harness connector for signs of damaged, bent, spread, corroded or unseated (pushed out) pins and signs of moisture in the connector or wire damage near the connector. Is any damage found?
  - a. Yes; repair as necessary. Verify repairs.
  - b. No; Go to step 8.
8. Measure the resistance between pins A and B of the ambient air sensor connector, harness side. Is the resistance greater than 10K ohms?
  - a. Yes; Go to step 9.
  - b. No; repair the short between pin A and pin B of the ambient air sensor harness. Verify repairs.
9. Measure the resistance between pin A of the ambient air sensor connector, harness side and ground. Is the resistance greater than 10K ohms?
  - a. Yes; replace the CPC. Refer to Original Equipment Manufacturer (OEM) literature. Verify repairs.
  - b. No; repair the wire shorted to ground between pin A of the ambient air sensor connector and pin 15 of the CPC #3 connector.