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## Service Information Bulletin

SUBJECT	DATE
SPN 4364 (ACM)(EPA10)	July 2015

### Additions, Revisions, or Updates

Publication Number / Title	Platform	Section Title	Change
DDC-SVC-MAN-0084 DDC-SVC-MAN-S084	DD Platform	SPN 4364/FMI 1 - EPA10	Updated Diagnostic

*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 4364/FMI 1 - EPA10

Selective Catalyst Reduction NOx Conversion Very Low

**Table 1.**

SPN 4364/FMI 1	
Description	This fault code sets when the Aftertreatment Control Module (ACM) detects that the NOx conversion is lower than a calibrated threshold
Monitored Parameter	Selective Catalyst Reduction (SCR) Inlet NOx sensor, SCR outlet NOx sensor
Typical Enabling Conditions	Diesel Exhaust Fluid (DEF) dosing enabled, 1000 - 1500 rpm, 15 - 100% load, SCR inlet temperature sensor less than 650°C (1200°F), ambient temperature greater than 0°C (32°F), coolant temperature greater than 70°C (158°F), non-regeneration conditions present
Monitor Sequence	None
Execution Frequency	Continuous when enabling conditions met
Typical Duration	30 Minutes
Dash Lamps	MIL
Engine Reaction	Derate 25%
Verification	Parked Regeneration

1. Connect DiagnosticLink<sup>®</sup>.
2. Turn the ignition ON (key ON, engine OFF).
3. Was another emission component-related fault code repaired prior to this step?
  - a. Yes; perform a parked regeneration and recheck for the fault code. If the fault code returns, Go to step 4.
  - b. No; Go to step 4.
4. Check for other fault codes. Are there any air management system fault codes present for the Intake Throttle Valve (ITV), Intake Manifold Pressure (IMP), Intake Air Temperature (IAT), turbocharger, etc.?
  - a. Yes; diagnose the other fault codes first.
  - b. No; Go to step 5.
5. Are there any Exhaust Gas Recirculation (EGR) system fault codes present?
  - a. Yes; diagnose the other fault codes first.
  - b. No; Go to step 6.
6. Are there any other NOx sensor fault codes present?
  - a. Yes; diagnose the other fault codes first.
  - b. No; Go to step 7.
7. Are there any fault codes for the DEF metering unit, DEF pump, or DEF air valve present?
  - a. Yes; diagnose the other fault codes first.
  - b. No; Go to step 8.
8. Are there any ACM temperature or pressure fault codes present?
  - a. Yes; diagnose the other fault codes first.
  - b. No; Go to step 9.
9. Turn the ignition OFF.
10. Use DEF test strip A0005850202 to check for diesel fuel or oil contamination of the DEF fluid. Refer to section "Checking Diesel Exhaust Fluid Quality". Do the test strips or visual inspection indicate that the DEF is contaminated?
  - a. Yes; for diesel fuel or oil contamination, refer to 13 TS-17 (<http://ddcsn-ddc.freightliner.com/cps/rde/xbcr/ddcsn/13TS17.pdf>) and refer to appropriate Original Equipment Manufacturer (OEM) literature for DEF tank cleaning/flushing procedures. Refill the DEF tank with new DEF. Verify repair.
  - b. No; Go to step 11.
11. Using a refractometer from the DEF Test Kit W060589001900, measure the DEF percentage. Refer to section "Checking Diesel Exhaust Fluid Quality". Is DEF percentage between 28% and 36%?

- a. Yes; Go to step 12.
  - b. No; flush the DEF system. Refer to section "Flushing of the Diesel Exhaust Fluid System". Verify repair.
12. Turn the ignition ON (key ON, engine OFF).
13. Compare the DEF pressure sensor reading to the barometric pressure sensor reading. Are the readings within 29.6 kPa (4.3 psi) of each other?
- a. Yes; Go to step 14.
  - b. No; replace the DEF pressure sensor. Refer to section "Removal of the Diesel Exhaust Fluid Pressure Sensor". Verify repair.
14. Perform the DEF quantity service routine. Refer to section "Diesel Exhaust Fluid Quantity Test - EPA10". Go to step 15.
15. Monitor the amount of DEF dispensed into the DEF-safe container included in DEF test kit W060589001900. Is the amount of DEF dispensed between 102 and 138 mL (3.7 and 4.5 oz.)?
- a. Yes; Go to step 16.
  - b. No; flush the DEF metering unit. Verify repair.

**NOTE:** SPN 3361/FMI 5 will set when the DEF dosing valve electrical connector is disconnected. The fault code can be cleared using DiagnosticLink after the DEF dosing valve electrical connector is reconnected.

16. Disconnect the DEF dosing valve electrical connector.



**WARNING: ENGINE EXHAUST**

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



**WARNING: HOT EXHAUST**

During parked regeneration the exhaust gases will be extremely HOT and could cause a fire if directed at combustible materials. The vehicle must be parked outside.



**WARNING: PERSONAL INJURY**

To avoid injury before starting and running the engine, ensure the vehicle is parked on a level surface, parking brake is set, and the wheels are blocked.

17. Start the engine.
18. Run the EPA10 Perform Performance Check - Low Temperature ATD procedure to check the NOx sensors. Refer to section "EPA10 Perform Performance Check - Low Temperature ATD". Are the Inlet NOx sensor and outlet NOx sensor readings within 50 Parts Per Million (PPM) of each other?
- a. Yes; Go to step 20.
  - b. No; replace the outlet NOx sensor. Go to step 19.
19. Run the EPA10 Perform Performance Check - Low Temperature ATD procedure to validate the NOx sensors are reading correctly. Refer to section "EPA10 Perform Performance Check - Low Temperature ATD". Are the inlet NOx sensor and outlet NOx sensor readings within 50 Parts Per Million (PPM) of each other?
- a. Yes; Go to step 20.
  - b. No; replace the inlet NOx sensor. Go to step 20.
20. Reconnect the DEF dosing valve electrical connector.



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21. Start the engine and perform a parked regeneration while monitoring the NOx efficiency. Is the NOx efficiency above 70%?
  - a. Yes; clear codes and release the vehicle.
  - b. No; Go to step 22.
22. Review the last seven minutes of the parked regeneration log file; was the SCR inlet temperature more than 38°C (68.4°F) lower than SCR outlet temperature?
  - a. Yes; Go to step 23.
  - b. No; replace the ATD. For a One-box system, replace the DOC/SCR module. For a Two-box system, replace the SCR module. Complete the ATD check list to identify cause of failure. Refer to section "ATD Checklist - EPA07/EPA10/GHG14".
23. Perform a low temperature Aftertreatment Device (ATD) check using DiagnosticLink to check for a drifted temperature sensor. Refer to section "EPA10 Perform Performance Check - Low Temperature ATD". Are the SCR inlet and SCR outlet temperatures within 25°C (45°F) during the last five minutes of this test?
  - a. Yes; replace the ATD. For a One-box system, replace the DOC/SCR module. For a Two-box system, replace the SCR module. Complete the ATD check list to identify cause of failure. Refer to section "ATD Checklist - EPA07/EPA10/GHG14".
  - b. No; replace the drifted SCR temperature sensor and verify repair.