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Service Information Bulletin

SUBJECT	DATE
SPN 3216/FMI 13 - EPA10/GHG14	October 2013

Additions, Revisions, or Updates

Publication Number / Title	Platform	Section Title	Change
DDC-SVC-MAN-0084	EPA10 – GHG14 DD Platform	SPN 3216/FMI 13 - EPA10	Currently, the two troubleshooting procedures for SPN 3216/13, EPA10 and GHG14, reference removal of the Outlet NOx sensor. The reference needs be to the Inlet sensor instead. Markup for both troubleshooting procedures are included in attachment.
		SPN 3216/FMI 13 – GHG14	

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2 SPN 3216/FMI 13 - EPA10

This diagnostic is typically SCR Inlet NOx Sensor Signal Not Available.

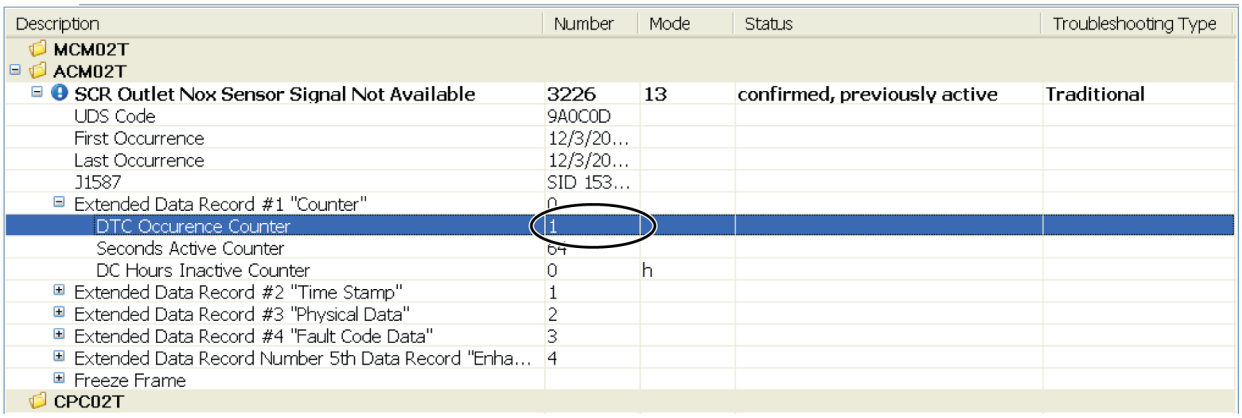
Table 1.

SPN 3216/FMI 13	
Description	Selective Catalyst Reduction (SCR) Inlet NOx Sensor Signal Not Available
Monitored Parameter	SCR Inlet NOx Sensor Signal
Typical Enabling Conditions	Always Enabled
Monitor Sequence	None
Execution Frequency	Always Enabled
Typical Duration	2 Seconds
Dash Lamps	MIL
Engine Reaction	
Verification	Engine Idle (1 minute)

NOTE: If fault occurred during high idle regeneration, clear fault and release vehicle.

Check as follows:

1. Is the SPN 3216/FMI 13 currently active?
   a. Yes; Go to step 3.
   b. No; Go to step 2.
2. Check the SPN 3216/FMI 13 DTC occurrence counter.



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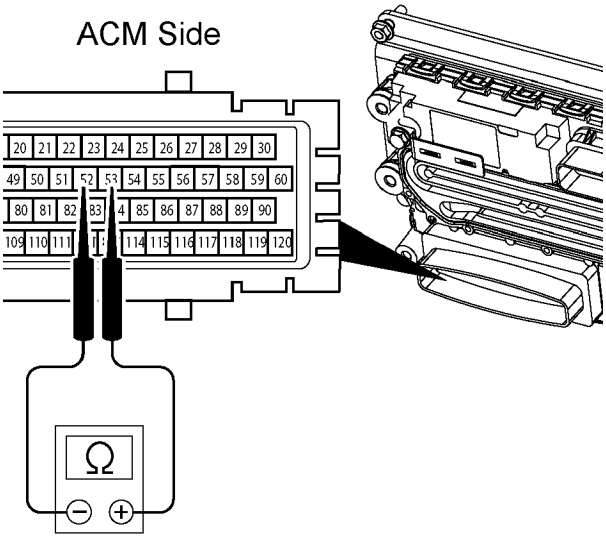
   a. If the DTC occurrence counter is 5 or less, clear the fault and release the vehicle.
   b. If the DTC occurrence counter is greater than 5, Go to step 3.
3. Disconnect the SCR inlet NOx sensor.
4. Inspect the SCR inlet NOx sensor harness for bent, spread, or corroded pins.
   a. If the pins are bent, spread, or corroded, repair as necessary.
   b. If the connector shows no signs of damage, Go to step 5.
5. Turn the ignition ON (key ON, engine OFF).

6. Measure the voltage between pins 1 and 4 on the harness side of the SCR inlet NOx sensor connector.
   a. If the voltage is less than 11.5 volts, Go to step 7.
   b. If the voltage is greater than 11.5 volts, Go to step 8.
7. Measure the voltage between pin 1 on the harness side of the SCR inlet NOx sensor connector and engine ground.
   a. If the voltage is less than 11.5 volts, repair the wire between pin 1 on the harness side of the SCR inlet NOx sensor connector and pin 50 of the ACM2 120-pin connector.
   b. If the voltage is greater than 11.5 volts, repair the wire between pin 4 on the harness side of the SCR inlet NOx sensor connector and pin 51 of the ACM2 120-pin connector.
8. Turn the ignition OFF.
9. Measure the resistance between pins 2 and 3 on the harness side of the SCR inlet NOx sensor connector.
   a. If the resistance is between 50 and 70 ohms, replace the SCR inlet NOx sensor. Refer to section "Removal of the EPA10 Selective Catalyst Reduction Inlet NOx Sensor".
   b. If the resistance is not between 50 and 70 ohms, Go to step 10.
10. Disconnect the Aftertreatment Control Module (ACM2) 120-pin connector.
11. Inspect the ACM2 120-pin harness connector for signs of damage, bent, spread, corroded or unseated (pushed out) pins and signs of moisture in the connector or wire damage near the connector.
    a. If signs of damage are present, repair as necessary.
    b. If no signs of damage are present, Go to step 12.
12. Measure the resistance between pins 2 and 3 on the harness side of the SCR inlet NOx sensor connector.
    a. If the resistance is less than 1K ohms, repair the short between pins 2 and 3 on the harness side of the SCR inlet NOx sensor connector and pins 52 and 53 of the ACM2 120-pin connector. Refer to section "Verify Repairs".
    b. If the resistance is greater than 1K ohms, Go to step 13.
13. Measure the resistance between pin 2 on the harness side of the SCR inlet NOx sensor connector and pin 53 of the ACM2 120-pin connector.
    a. If the resistance is greater than 5 ohms, repair the wire between pin 2 on the harness side of the SCR inlet NOx sensor connector and pin 53 of the ACM2 120-pin connector.
    b. If the resistance is less than 5 ohms, Go to step 14.
14. Measure the resistance between pin 3 on the harness side of the SCR inlet NOx sensor connector and pin 52 of the ACM2 120-pin connector.
    a. If the resistance is greater than 5 ohms, repair the wire between pin 3 on the harness side of the SCR inlet NOx sensor connector and pin 52 of the ACM2 120-pin connector. Refer to section "Verify Repairs".
    b. If the resistance is less than 5 ohms, Go to step 15.
15. Test the ACM2 internal resistor; measure the resistance between pins 52 and 53 on the ACM2 120-pin connector.



a. If the resistance is between 50 and 70 ohms, replace the SCR Inlet NOx Sensor. Refer to section "Removal of the EPA10 Selective Catalyst Reduction Inlet NOx Sensor"
b. If the resistance is NOT between 50 and 70 ohms, replace the ACM2.

3 SPN 3216/FMI 13 - GHG14

This diagnostic is typically SCR Inlet NOx Sensor Signal Not Available.

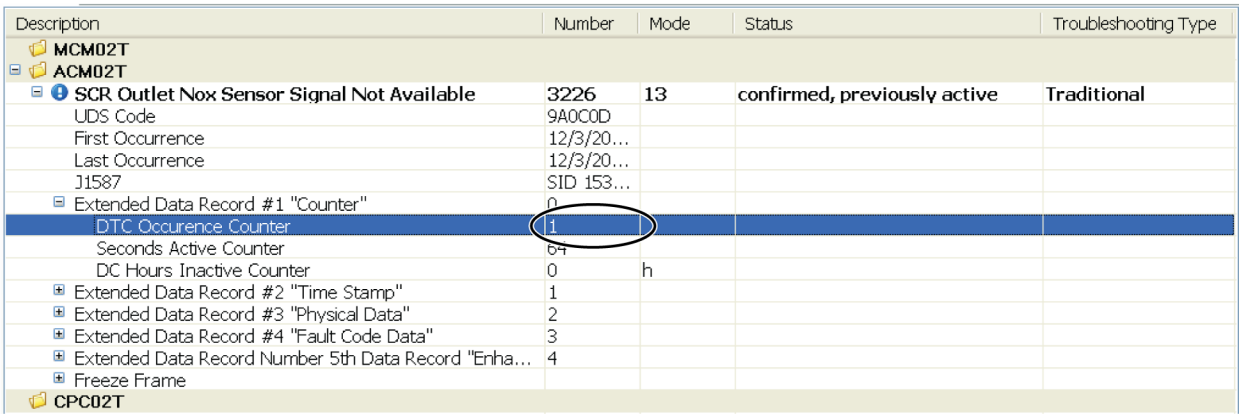
Table 2.

SPN 3216/FMI 13	
Description	Selective Catalyst Reduction (SCR) Inlet NOx Sensor Signal Not Available
Monitored Parameter	SCR Inlet NOx Sensor Signal
Typical Enabling Conditions	Always Enabled
Monitor Sequence	None
Execution Frequency	Always Enabled
Typical Duration	2 Seconds
Dash Lamps	MIL
Engine Reaction	None
Verification	Engine Idle (1 minute)

NOTE: If fault occurred during high idle regeneration, clear fault and release vehicle.

Check as follows:

1. Is the SPN 3216/FMI 13 currently active?
   a. Yes; Go to step 3.
   b. No; Go to step 2.
2. Check the SPN 3216/FMI 13 DTC occurrence counter.



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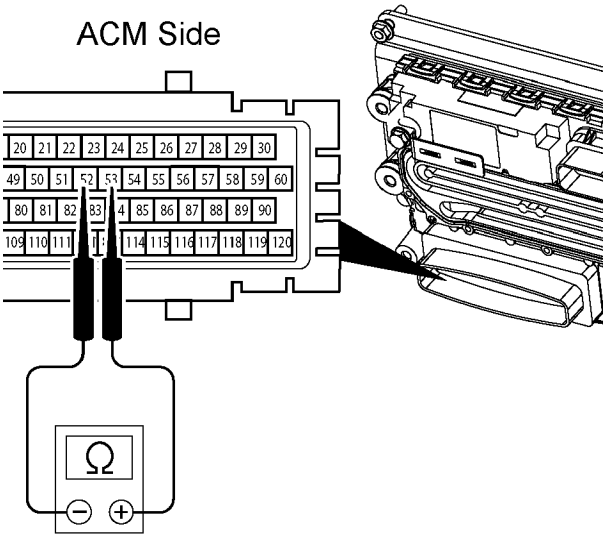
   a. If the DTC occurrence counter is five or less, clear the fault and release the vehicle.
   b. If the DTC occurrence counter is greater than five, Go to step 3.
3. Disconnect the SCR inlet NOx sensor.
4. Inspect the SCR inlet NOx sensor harness for bent, spread, or corroded pins.
   a. If the pins are bent, spread, or corroded, repair as necessary.
   b. If the connector shows no signs of damage, Go to step 5.
5. Turn the ignition ON (key ON, engine OFF).

6. Measure the voltage between pins 1 and 4 on the harness side of the SCR inlet NOx sensor connector.
   a. If the voltage is less than 11.5 volts, Go to step 7.
   b. If the voltage is greater than 11.5 volts, Go to step 8.
7. Measure the voltage between pin 1 on the harness side of the SCR inlet NOx sensor connector and engine ground.
   a. If the voltage is less than 11.5 volts, repair the wire between pin 1 on the harness side of the SCR inlet NOx sensor connector and pin 50 of the ACM2.1 120-pin connector.
   b. If the voltage is greater than 11.5 volts, repair the wire between pin 4 on the harness side of the SCR inlet NOx sensor connector and pin 51 of the ACM2.1 120-pin connector.
8. Turn the ignition OFF.
9. Measure the resistance between pins 2 and 3 on the harness side of the SCR inlet NOx sensor connector.
   a. If the resistance is between 50 and 70 ohms, replace the SCR inlet NOx sensor. Refer to section "Removal of the GHG14 Selective Catalytic Reduction Inlet NOx Sensor".
   b. If the resistance is not between 50 and 70 ohms, Go to step 10.
10. Disconnect the Aftertreatment Control Module (ACM2.1) 120-pin connector.
11. Inspect the ACM2.1 120-pin harness connector for signs of damage, bent, spread, corroded or unseated (pushed out) pins and signs of moisture in the connector or wire damage near the connector.
    a. If signs of damage are present, repair as necessary.
    b. If no signs of damage are present, Go to step 12.
12. Measure the resistance between pins 2 and 3 on the harness side of the SCR inlet NOx sensor connector.
    a. If the resistance is less than 10K ohms, repair the short between pins 2 and 3 on the harness side of the SCR inlet NOx sensor connector and pins 52 and 53 of the ACM2.1 120-pin connector. Refer to section "Verify Repairs".
    b. If the resistance is greater than 10K ohms, Go to step 13.
13. Measure the resistance between pin 2 on the harness side of the SCR inlet NOx sensor connector and pin 53 of the ACM2.1 120-pin connector.
    a. If the resistance is greater than 5 ohms, repair the wire between pin 2 on the harness side of the SCR inlet NOx sensor connector and pin 53 of the ACM2.1 120-pin connector.
    b. If the resistance is less than 5 ohms, Go to step 14.
14. Measure the resistance between pin 3 on the harness side of the SCR inlet NOx sensor connector and pin 52 of the ACM2.1 120-pin connector.
    a. If the resistance is greater than 5 ohms, repair the wire between pin 3 on the harness side of the SCR inlet NOx sensor connector and pin 52 of the ACM2.1 120-pin connector. Refer to section "Verify Repairs".
    b. If the resistance is less than 5 ohms, Go to step 15.
15. Test the ACM2.1 internal resistor; measure the resistance between pins 52 and 53 on the ACM2.1.



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a. If the resistance is between 50 and 70 ohms, replace the SCR inlet NOx Sensor. Refer to section "Removal of the GHG14 Selective Catalytic Reduction Inlet NOx Sensor"
b. If the resistance is NOT between 50 and 70 ohms, replace the ACM2.1.