

1 01 17-17



Service Information Bulletin

SUBJECT	DATE
SPN 5928 (MCM) (GHG17) - EGR H Bridge circuit diagnostics	January 2017

Additions, Revisions, or Updates

Publication Number / Title	Platform	Section Title	Change
DDC-SVC-MAN-0193	GHG17 Medium Duty	SPN 5928/FMI 3 - GHG17	These are new diagnostics for the MDEG engine.
		SPN 5928/FMI 4 - GHG17	
		SPN 5928/FMI 5 - GHG17	
		SPN 5928/FMI 14 - GHG17	

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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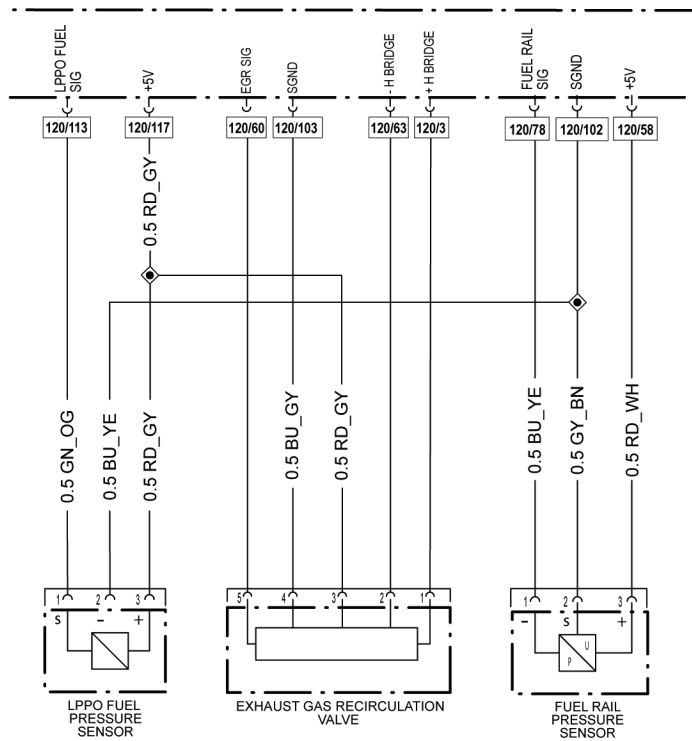
2 SPN 5928/FMI 3 - GHG17

H Bridge 2 EGR Valve Circuit Shorted to Battery

Table 1.

SPN 5928/FMI 3	
Description	This Fault Code Sets When the Motor Control Module (MCM) Detects a Short to Power on the H Bridge Negative Circuit.
Monitored Parameter	H Bridge -
Typical Enabling Conditions	
Monitor Sequence	
Execution Frequency	
Typical Duration	
Dash Lamps	MIL, CEL
Engine Reaction	25% Derate
Verification	

Check as follows:



d150409

1. Connect DiagnosticLink®.
2. Turn the ignition OFF.
3. Disconnect and inspect the EGR valve electrical connector harness side. Is there corrosion present?
 - a. Yes; replace the EGR valve and the electrical connector. Verify repair.
 - b. No; Go to step 4.
4. Are any of the pins or the connector damaged?
 - a. Yes; Go to step 5.
 - b. No; Go to step 6.
5. Inspect the EGR valve electrical connector component side. Are any of the pins or the connector damaged?

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- a. Yes; replace the EGR valve and the electrical connector. Verify repair.
 - b. No; replace the EGR valve electrical connector. Verify repair.
 6. Turn the ignition ON (key ON, engine OFF).
 7. Check the fault codes. Is fault code SPN 5928/FMI 3 still active?
 - a. Yes; repair the short to power between pin 2 of the EGR valve electrical connector harness side and pin 110 of the MCM 120-pin electrical connector. Verify repair.
 - b. No; replace the EGR valve.

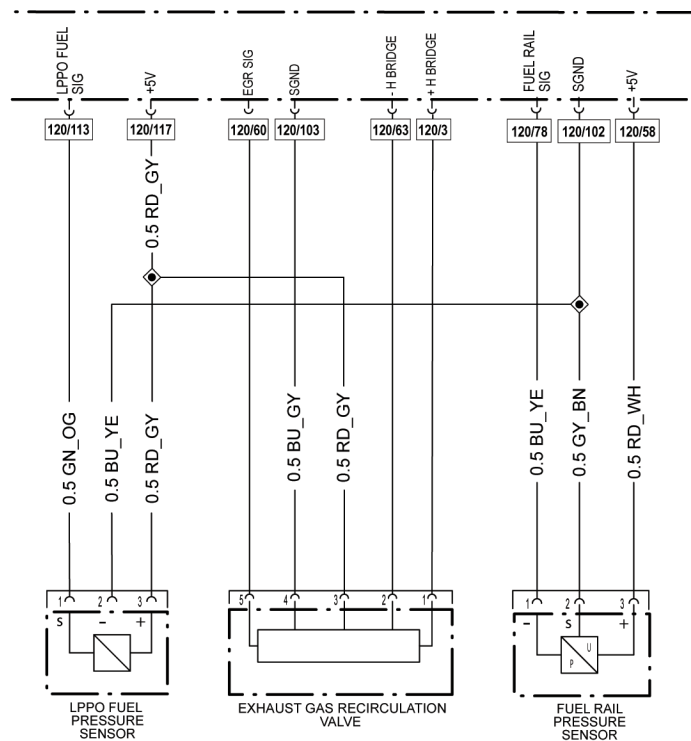
3 SPN 5928/FMI 4 - GHG17

H Bridge 2 EGR Valve Circuit Shorted to Ground

Table 2.

SPN 5928/FMI 4	
Description	This Fault Code Sets When the Motor Control Module (MCM) Detects a Short to Ground on the H Bridge Positive Circuit.
Monitored Parameter	H Bridge +
Typical Enabling Conditions	
Monitor Sequence	
Execution Frequency	
Typical Duration	
Dash Lamps	MIL, CEL
Engine Reaction	25% Derate
Verification	

Check as follows:



d150409

1. Connect DiagnosticLink[®].
2. Turn the ignition OFF.
3. Disconnect and inspect the EGR valve electrical connector harness side. Is there corrosion present?
 - a. Yes; replace the EGR valve and the electrical connector. Verify repair.
 - b. No; Go to step 4.
4. Are any of the pins or the connector damaged?
 - a. Yes; Go to step 5.
 - b. No; Go to step 6.
5. Inspect the EGR valve electrical connector component side. Are any of the pins or the connector damaged?

- a. Yes; replace the EGR valve and the electrical connector. Verify repair.
 - b. No; replace the EGR valve electrical connector. Verify repair.
6. Turn the ignition ON (key ON, engine OFF).
7. Check the fault codes. Is fault code SPN 5928/FMI 4 still active?
 - a. Yes; repair the short to power between pin 1 of the EGR valve electrical connector harness side and pin 3 of the MCM 120-pin electrical connector. Verify repair.
 - b. No; replace the EGR valve.

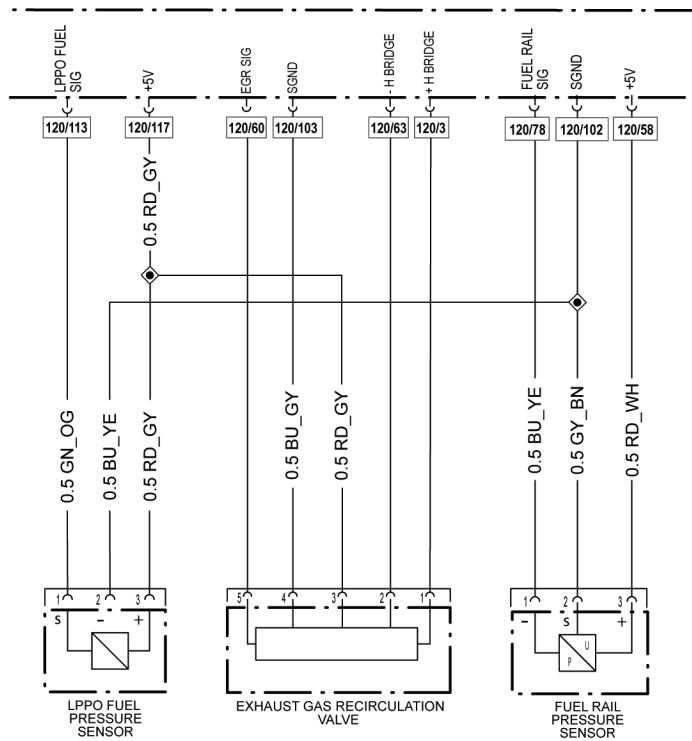
4 SPN 5928/FMI 5 - GHG17

H Bridge 2 EGR Valve Short-Circuit / Over Current

Table 3.

SPN 5928/FMI 5	
Description	This Fault Code Sets When the Motor Control Module (MCM) Detects That the H Bridge Negative and H Bridge Positive Circuits Are Shorted Together.
Monitored Parameter	H Bridge +, H Bridge -
Typical Enabling Conditions	
Monitor Sequence	
Execution Frequency	
Typical Duration	
Dash Lamps	MIL, CEL
Engine Reaction	25% Derate
Verification	

Check as follows:



d150409

1. Connect DiagnosticLink[®].
2. Turn the ignition OFF.
3. Disconnect and inspect the EGR valve electrical connector harness side. Is there corrosion present?
 - a. Yes; replace the EGR valve and the electrical connector. Verify repair.
 - b. No; Go to step 4.
4. Are any of the pins or the connector damaged?
 - a. Yes; Go to step 5.
 - b. No; Go to step 6.
5. Inspect the EGR valve electrical connector component side. Are any of the pins or the connector damaged?

- a. Yes; replace the EGR valve and the electrical connector. Verify repair.
 - b. No; replace the EGR valve electrical connector. Verify repair.
6. Turn the ignition ON (key ON, engine OFF).
7. Check the fault codes. Is fault code SPN 5928/FMI 5 still active?
- a. Yes; repair the short between the H Bridge + and H Bridge - circuits. Verify repair.
 - b. No; replace the EGR valve.

5 SPN 5928/FMI 14 - GHG17

H Bridge 2 EGR Valve Circuit Open Load

Table 4.

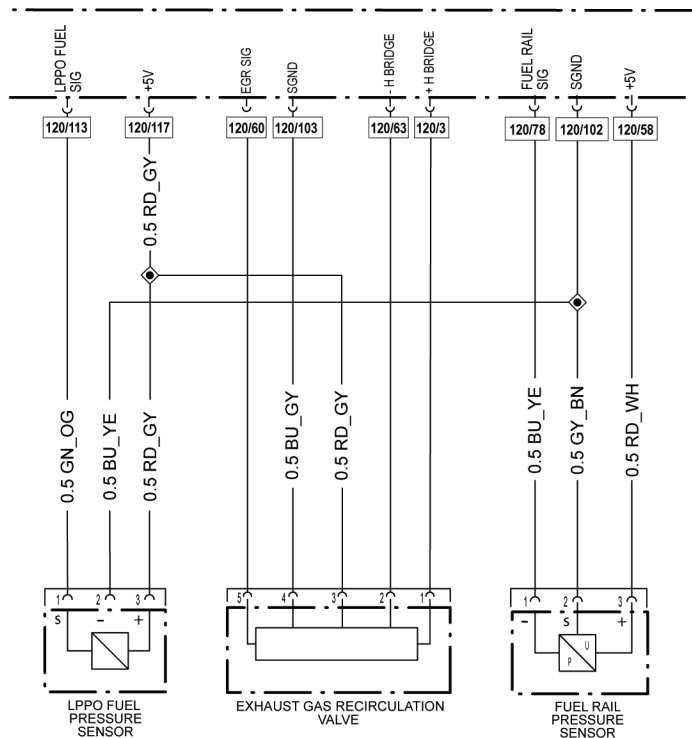
SPN 5928/FMI 14	
Description	This Fault Code Sets When the Motor Control Module (MCM) Detects an Open in the H Bridge Circuits.
Monitored Parameter	H Bridge +, H Bridge -
Typical Enabling Conditions	
Monitor Sequence	
Execution Frequency	
Typical Duration	
Dash Lamps	MIL, CEL
Engine Reaction	25% Derate
Verification	

Check as follows:

Tools needed:

Table 5.

Kit part number/ probe part number	flex probe boot color/ shrink tube color
J-48476/ J-48476-21	RED/RED



d150409

1. Connect DiagnosticLink[®].
2. Turn the ignition OFF.

3. Disconnect and inspect the EGR valve electrical connector harness side. Is there corrosion present?
 - a. Yes; replace the EGR valve and the electrical connector. Verify repair.
 - b. No; Go to step 4.
4. Are any of the pins or the connector damaged?
 - a. Yes; Go to step 5.
 - b. No; Go to step 6.
5. Inspect the EGR valve electrical connector component side. Are any of the pins or the connector damaged?
 - a. Yes; replace the EGR valve and the electrical connector. Verify repair.
 - b. No; replace the EGR valve electrical connector. Verify repair.
6. Using the correct flex probe, check the pin fit. Are there any spread pins?
 - a. Yes; replace the EGR valve electrical connector harness side. Verify repair.
 - b. No; Go to step 7.
7. Turn the ignition ON (key ON, engine OFF).
8. Using the correct flex probes, jump pin 1 to pin 2 of the EGR valve electrical connector harness side. Does fault code SPN 5928/FMI 5 become active?
 - a. Yes; replace the EGR valve.
 - b. No; repair the circuit between pin 1 of the EGR valve electrical connector harness side and pin 3 of the MCM 120-pin electrical connector harness side. Verify repair.