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Service Information Bulletin

SUBJECT	DATE
SPN 3510/FMI 4,7, and 8 (CPC)(GHG14)	October 2014

Additions, Revisions, or Updates

Publication Number / Title	Platform	Section Title	Change
DDC-SVC-MAN-0084	DD Platform	SPN 3510/FMI 4,7, and 8 - GHG14	Updated Diagnostics

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2 SPN 3510/FMI 4 - GHG14

Accelerator Pedal Supply Voltage Circuit Failed Low

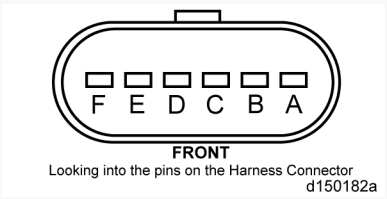
Table 1.

SPN 3510/FMI 4	
Description	Accelerator Pedal Sensor Supply Signal failed low
Monitored Parameter	Pedal Supply Voltage
Typical Enabling Conditions	Always on
Monitor Sequence	None
Execution Frequency	Continuous when enabling conditions met
Typical Duration	2 Seconds
Dash Lamps	CEL
Engine Reaction	None
Verification	Key Cycle - Ignition ON

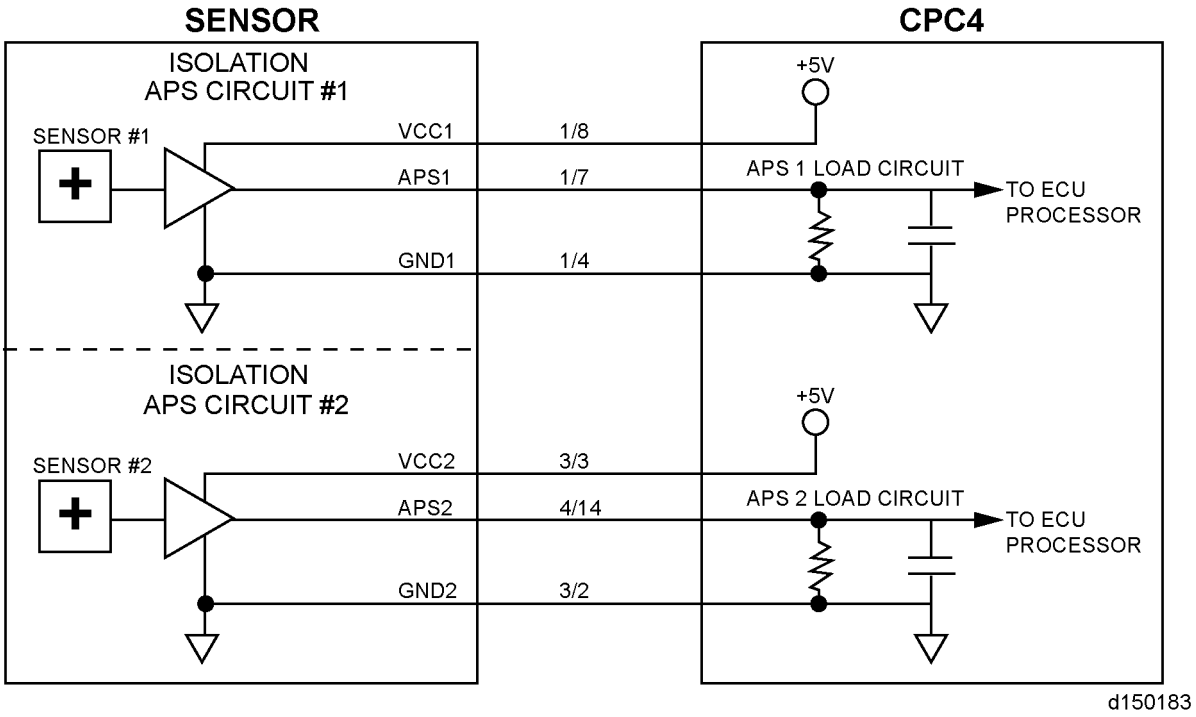
Check as Follows:

1. Turn the ignition OFF.
2. Disconnect the Accelerator Pedal (AP) connector.

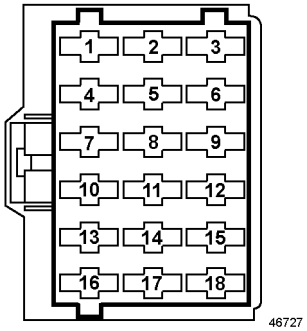
Table 2.

Sensor Connector and Pinout				
Function	CPC Pinout	Connector Pinout	Comments	Harness Connector Body
APS1	1/7	A	SENSOR 1	
GND1	1/4	B	APS 1 GND	
VCC1 (+5V)	1/8	C	APS1 Power Supply	
VCC2 (+5V)	3/3	D	APS2 Power Supply	
GND2	3/2	E	APS2 GND	
APS2	4/14	F	SENSOR 2	Harness Connector and Seal (P/N: 12066317) Terminal Female (P/N: 12103881)

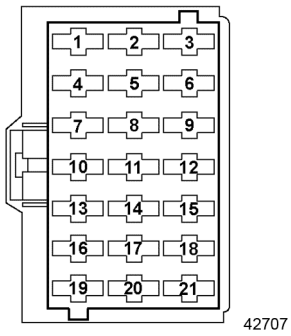
3. Inspect the AP and harness side connectors for signs of damaged, bent, spread, corroded or unseated (pushed out) pins and signs of moisture in the connector or wire damage near the connector. Is any damage found?
   a. Yes; repair as necessary. Verify repair.
   b. No; Go to step 4.
4. Turn the ignition ON (key ON, engine OFF).
5. Clear codes and cycle ignition.
6. Using DiagnosticLink ®, monitor fault code SPN 3510/ FMI 4 with the AP disconnected. Does the fault code change or go inactive?
   a. Yes; replace the AP, clear codes and verify repair. Refer to Original Equipment Manufacturer (OEM) literature. Verify repair.
   b. No; Go to step 7.
7. Turn the ignition OFF.



8. Disconnect the #1 connector of the Common Powertrain Controller (CPC).



9. Measure the resistance between pin 8 and pin 4 of the CPC #1 connector. Is the resistance is less than 10K ohms?
   a. Yes; repair the short between pin 8 and pin 4 of the CPC #1connector . Verify repair.
   b. No; Go to step 10.
10. Measure the resistance between pin 8 of the CPC #1connectorand ground. Is the resistance less than 10K ohms?
   a. Yes; repair the short circuit between pin 8 of the CPC #1 connector and ground.
   b. No; Go to step 11.
11. Disconnect the #3 connector of the CPC.



12. Measure the resistance between pin 2 and pin 3 of the CPC#3 connector. Is the resistance less than 10K ohms?
    a. Yes; repair the short between pin 2 and pin 3 of the CPC #3 connector. Verify repair.
    b. No; Go to step 13.
13. Measure the resistance between pin 3 of the CPC #3 connector and ground. Is the resistance is less than 10K ohms?
    a. Yes; repair the short circuit between pin 3 of the CPC #3 connector and ground.
    b. No; replace the AP. Refer to Original Equipment Manufacturer (OEM) literature. Verify repair.

3 SPN 3510/FMI 7 - GHG14

Accelerator Pedal Supply Voltage Circuit Failed High

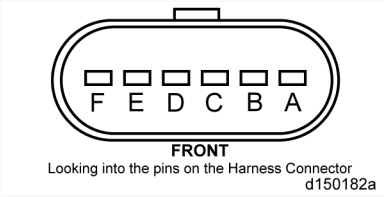
Table 3.

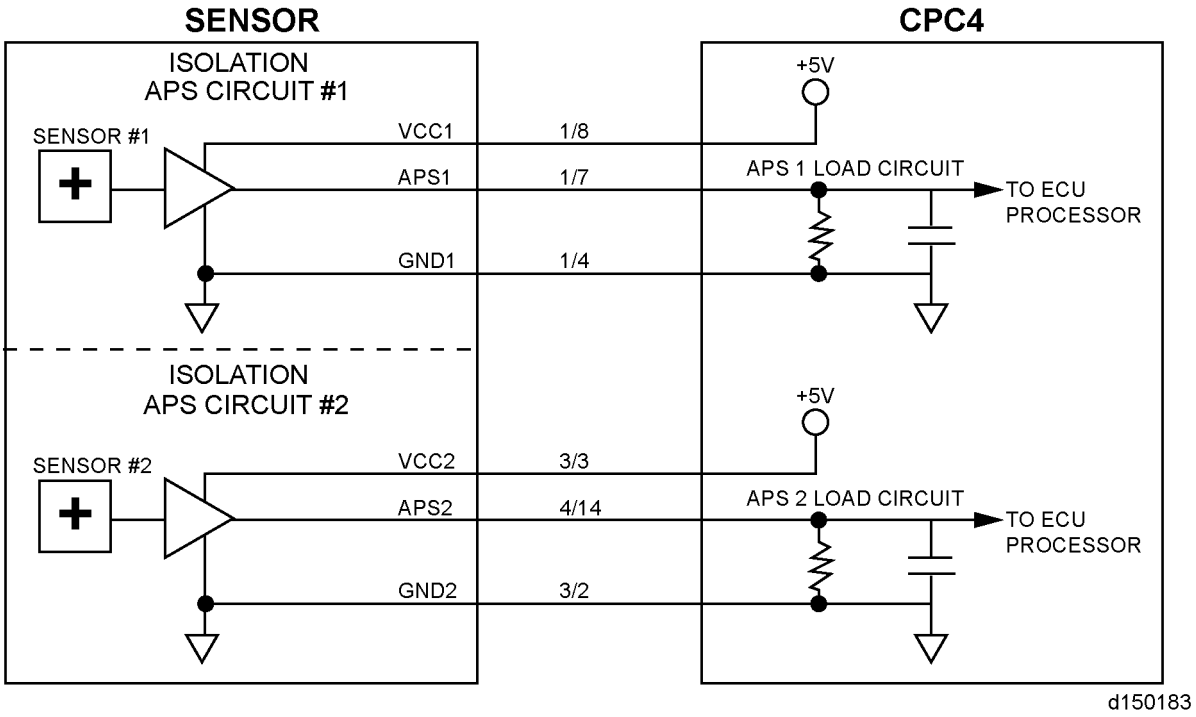
SPN 3510/FMI 7	
Description	Accelerator Pedal Sensor Supply Signal failed high
Monitored Parameter	Pedal Supply Voltage
Typical Enabling Conditions	Always on
Monitor Sequence	None
Execution Frequency	Continuous when enabling conditions met
Typical Duration	2 Seconds
Dash Lamps	CEL
Engine Reaction	None
Verification	Key Cycle - Ignition ON

Check as follows:

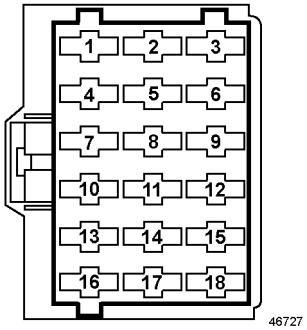
1. Disconnect the Accelerator Pedal (AP).
2. Turn the ignition ON (key ON, engine OFF).

Table 4.

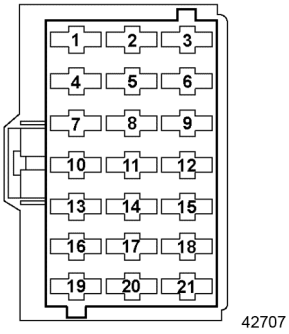
Sensor Connector and Pinout				
Function	CPC Pinout	Connector Pinout	Comments	Harness Connector Body
APS1	1/7	A	SENSOR 1	
GND1	1/4	B	APS 1 GND	
VCC1 (+5V)	1/8	C	APS1 Power Supply	
VCC2 (+5V)	3/3	D	APS2 Power Supply	
GND2	3/2	E	APS2 GND	
APS2	4/14	F	SENSOR 2	Harness Connector and Seal (P/N: 12066317) Terminal Female (P/N: 12103881)



3. Measure the voltage between pins B and C of the AP harness connector. Is the voltage is above 5.5 volts?
   a. Yes; repair short to power between pin C of the AP harness connector and pin 8 of the CPC #1 connector. Verify repair .
   b. No; Go to step 4.
4. Measure the voltage between pins D and E of the AP harness connector. Is the voltage is above 5.5 volts?
   a. Yes; repair short to power between pin D of the AP harness connector and pin 3 of the CPC #3 connector. Verify repair.
   b. No; Go to step 5.
5. Turn the ignition OFF.
6. Disconnect the CPC #1 connector.



7. Disconnect the CPC #3 connector.



8. Inspect the CPC and the harness connectors 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 repair.
   b. No; replace the CPC. Refer to Original Equipment Manufacturer (OEM) literature.

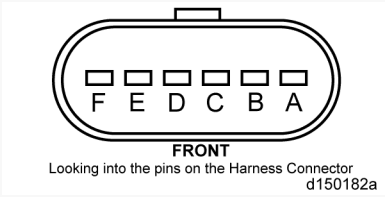
4 SPN 3510/FMI 8 - GHG14

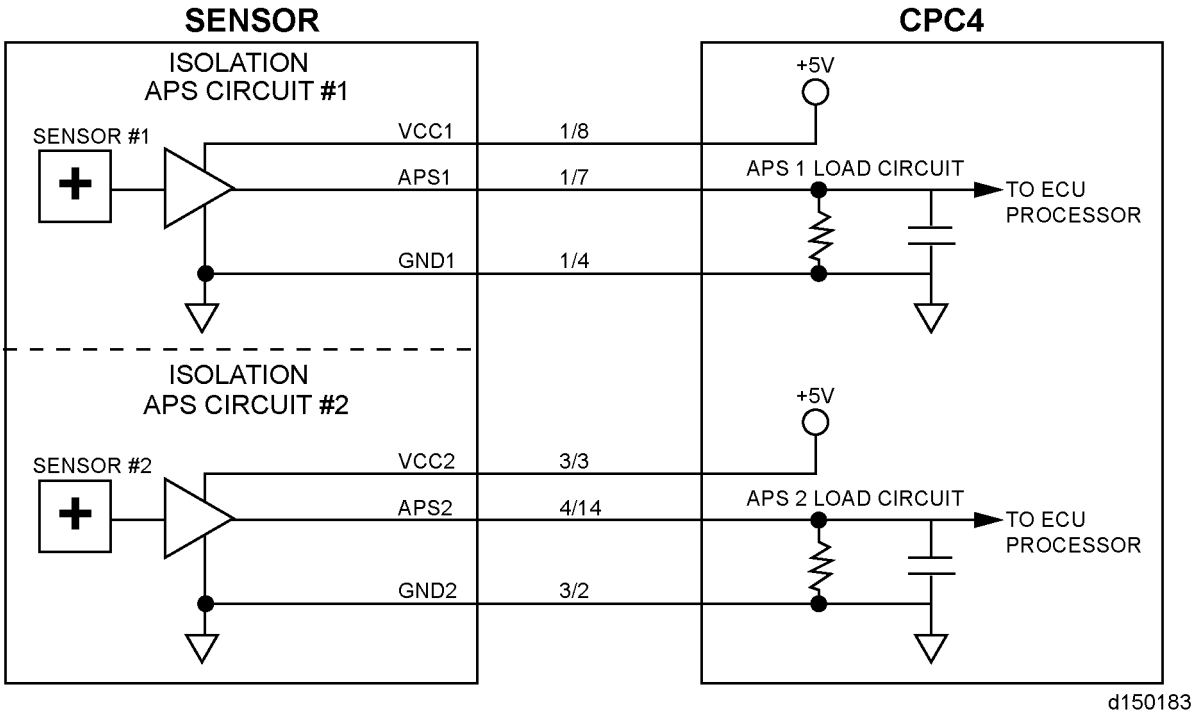
2-Channel Accelerator Pedal Supply Voltage Missing

Table 5.

SPN 3510/FMI 8	
Description	Accelerator Pedal Sensor Supply Signal failed (high or low)
Monitored Parameter	Pedal Supply Voltage
Typical Enabling Conditions	Always on
Monitor Sequence	None
Execution Frequency	Continuous when enabling conditions met
Typical Duration	2 Seconds
Dash Lamps	CEL
Engine Reaction	None
Verification	Key Cycle - Ignition ON

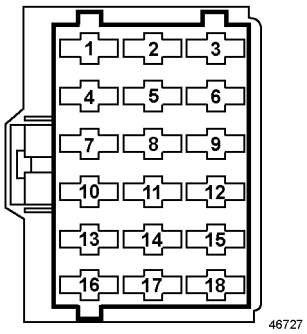
Table 6.

Sensor Connector and Pinout				
Function	CPC Pinout	Connector Pinout	Comments	Harness Connector Body
APS1	1/7	A	SENSOR 1	
GND1	1/4	B	APS 1 GND	
VCC1 (+5V)	1/8	C	APS1 Power Supply	
VCC2 (+5V)	3/3	D	APS2 Power Supply	
GND2	3/2	E	APS2 GND	
APS2	4/14	F	SENSOR 2	Harness Connector and Seal (P/N: 12066317) Terminal Female (P/N: 12103881)

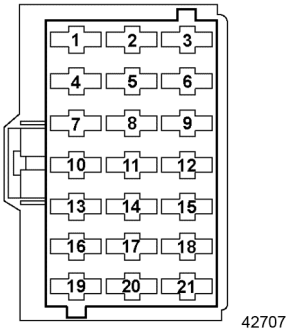


Check as Follows:

1. Disconnect the Accelerator Pedal (AP).
2. Inspect the AP and harness side 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 repair.
   b. No; Go to step 3.
3. Turn the ignition ON (key ON, engine OFF).
4. Measure the voltage between pins B and C of the AP harness side connector. Is the voltage above 5.5 volts?
   a. Yes; repair short to power between pin C of the AP harness side connector and pin 8 of the CPC #1 harness side connector. Verify repair .
   b. No; Go to step 5.
5. Measure the voltage between pins D and E of the AP harness side connector. Is the voltage above 5.5 volts?
   a. Yes; repair short to power between pin D of the AP harness side connector and pin 3 of the CPC #3 harness side connector. Verify repair.
   b. No; Go to step 6.
6. Turn the ignition OFF.
7. Disconnect the CPC #1 connector.



8. Disconnect the CPC #3 connector.



9. Inspect the CPC and the harness connectors 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 repair.
   b. No; Go to step 10.
10. Measure the resistance between pin C and pin B of the AP harness side connector. Is the resistance greater than 10K ohms?
   a. Yes; Go to step 11.
   b. No; repair the short between pin C and pin B of the AP harness side connector and pins 8 and 4 of the CPC #1 harness side connector. Verify repair.
11. Measure the resistance between pin C of the AP harness side connector and ground. Is the resistance greater than 10K ohms?
   a. Yes; Go to step 12.
   b. No; repair the short circuit between pin C of the AP harness side connector and ground. Verify repair.
12. Measure the resistance between pin D and pin E of the AP harness side connector. Is the resistance greater than 10K ohms?
   a. Yes; Go to step 13.
   b. No; repair the short between pin D and pin E of the AP harness side connector and pins 3 and 2 of the CPC #3 harness side connector. Verify repair.
13. Measure the resistance between pin D of the AP harness side connector and ground. Is the resistance greater than 10K ohms?
   a. Yes; Go to step 14.
   b. No; repair the short circuit between pin D of the AP harness side connector and ground. Verify repair.
14. Measure the resistance between pin D of the AP harness side connector and pin 3 of the CPC #3 connector. Is the resistance is greater than 5 ohms?
   a. Yes; repair the open circuit between pin F of the AP harness side connector and pin 14 of the CPC #4 harness side connector.
   b. No; Go to step 15.
15. Measure the resistance between pin C of the AP harness side connector and pin 8 of the CPC #1 harness side connector. Is the resistance is less than 5 ohms?
   a. Yes; replace the CPC. Refer to Original Equipment Manufacturer (OEM) literature.
   b. No; repair the open circuit between pin F of the AP harness side connector and pin 14 of the CPC #4 harness side connector.

