1 8 14-14

Service Information Bulletin

SUBJECT	DATE
SPN 4258 (MCM) (EPA07)	August 2014

Additions, Revisions, or Updates

Publication Number / Title	Platform	Section Title	Change
DDC-SVC-MAN-0084	EPA07 DD Platform	SPN 4258/FMI 3 - EPA07	These are new diagnostics.
		SPN 4258/FMI 4 - EPA07	

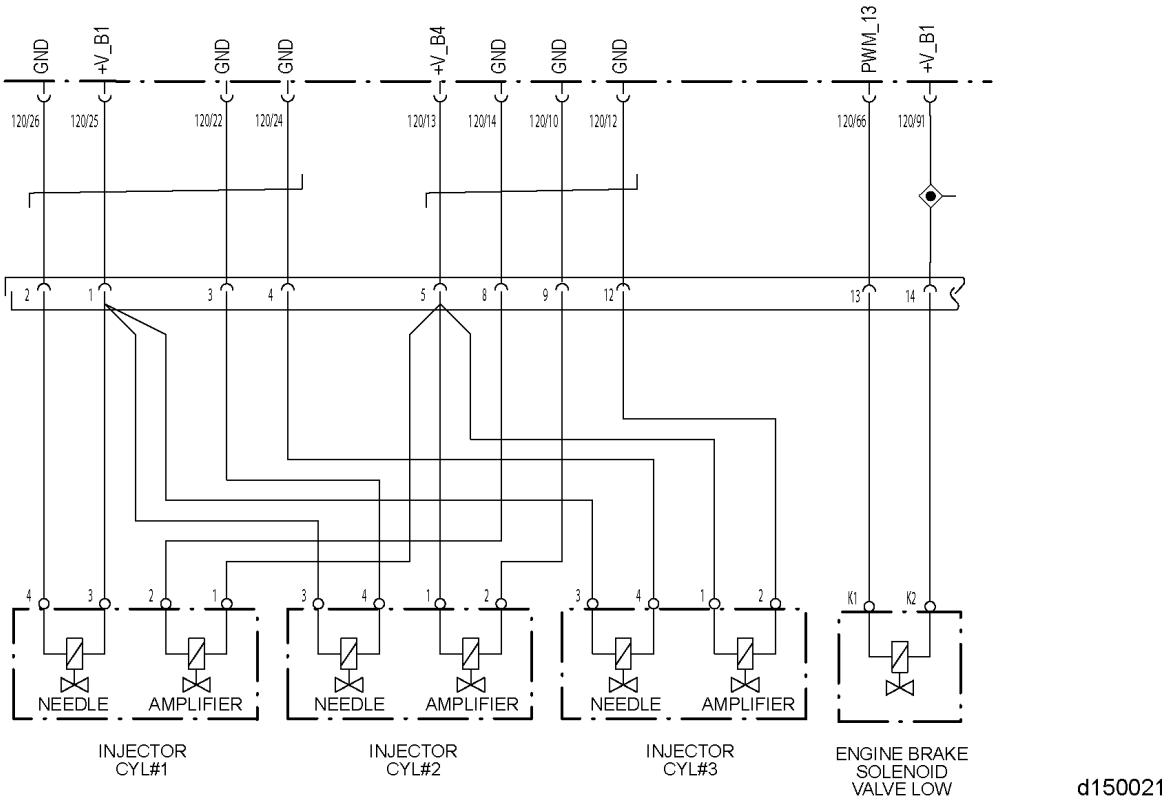
13400 Outer Drive, West, Detroit, Michigan 48239-4001
Telephone: 313-592-5000
www.demanddetroit.com

2 SPN 4258/FMI 3 - EPA07

Injector Amplifier Control Valve Cylinder 1, 2, 3 Shorted to Battery

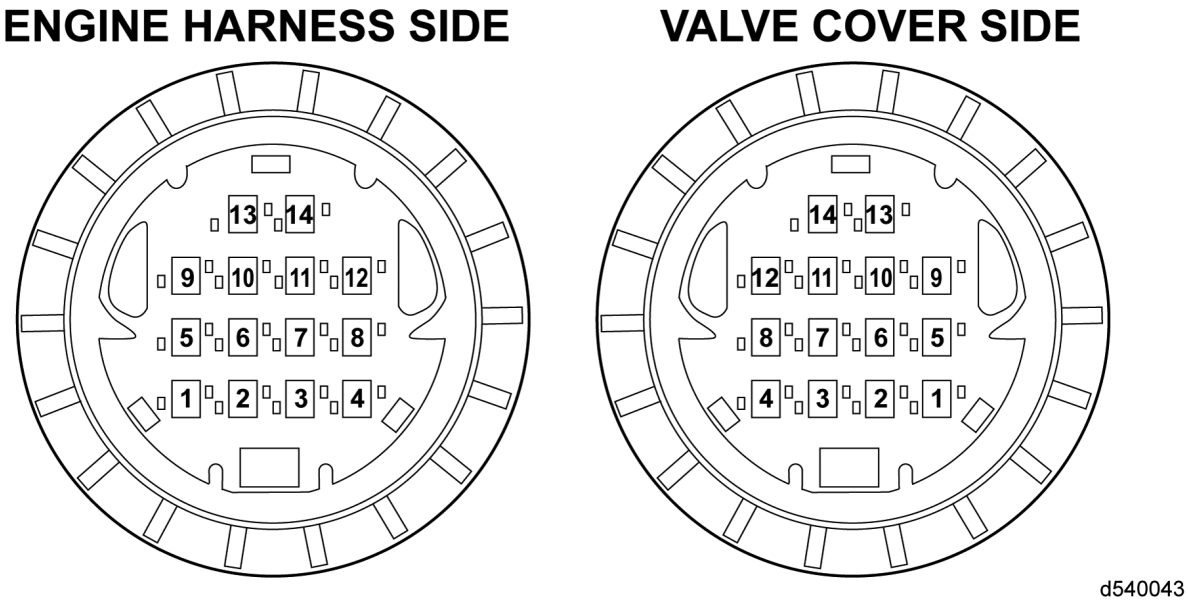
Table 1.

SPN 4258/FMI 3	
Description	This Code Sets When The MCM Detects That There Is A Short To Power On The Circuits For The Injector Amplifier Control Valve On Cylinders 1, 2 and/or 3.
Monitored Parameter	Injector Amplifier Control Valve Cylinder 1, 2, 3
Typical Enabling Conditions	Fuel Injector System Nozzle Opening Pressure Reading Greater Than 1.85
Monitor Sequence	None
Execution Frequency	Continuous when enabling conditions met
Typical Duration	2 Seconds
Dash Lamps	MIL, CEL
Engine Reaction	Derate 25%
Verification	Engine rpm 1400 to 1500 (1 minute)



Check as follows:

1. Disconnect the front 14-pin injector harness.
2. Turn the ignition ON (key ON, engine OFF).
3. On the front 14-pin injector harness (engine side), measure the voltage between pin 5 and ground. Is voltage present?



a. Yes; repair the circuit between pin 5 of the front 14-pin injector harness (engine side) and pin 13 of the 120-pin MCM electrical connector.
b. No; Go to step 4.

4. On the front 14-pin injector harness (engine side), measure the voltage between pin 12 and ground. Is voltage present?
   a. Yes; repair the circuit between pin 12 of the front 14-pin injector harness (engine side), and pin 12 of the 120-pin MCM electrical connector.
   b. No; Go to step 5.
5. On the front 14 pin injector harness (engine side), measure the voltage between pin 10 and ground. Is voltage present?
   a. Yes; repair the circuit between pin 9 of the front 14-pin injector harness (engine side), and pin 10 of the 120-pin MCM electrical connector.
   b. No; Go to step 6.
6. On the front 14 pin injector harness (engine side), measure the voltage between pin 8 and ground. Is voltage present?
   a. Yes; repair the circuits between pin 8 of the front 14-pin injector harness (engine side), and pin 14 of the 120-pin MCM electrical connector.
   b. No; replace the MCM. Refer to section "Removal of the Motor Control Module". Verify repair.

3 SPN 4258/FMI 4 - EPA07

Injector Amplifier Control Valve Cylinder 1, 2, 3 Shorted to Ground

Table 2.

SPN 4258/FMI 4	
Description	This Code Sets When the MCM Detects That There is a Short to Ground on the Circuits for the Injector Amplifier Control Valve on Cylinders 1, 2, and/or 3
Monitored Parameter	Injector Amplifier Control Valve Cylinder 1, 2, 3
Typical Enabling Conditions	Fuel injector system nozzle opening pressure reading greater than 1.85
Monitor Sequence	None
Execution Frequency	Continuous when enabling conditions met
Typical Duration	2 Seconds
Dash Lamps	MIL, CEL
Engine Reaction	Derate 25%
Verification	Engine rpm 1400 to 1500 (1 minute)

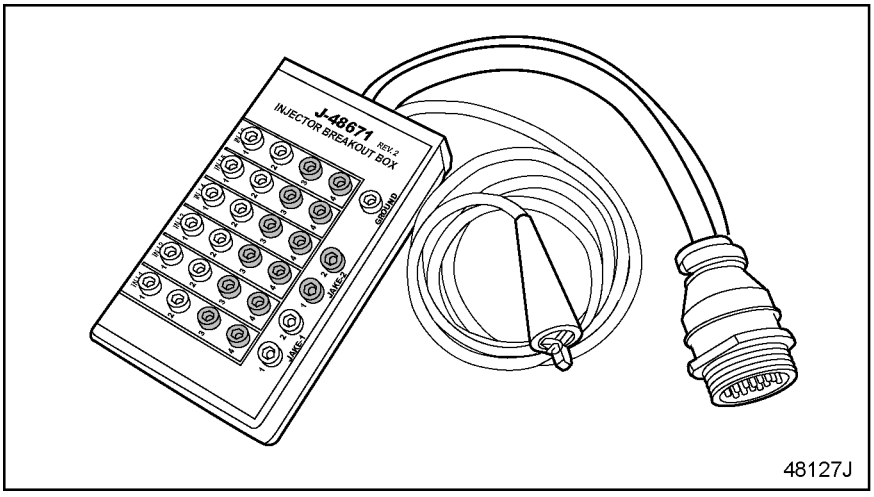


Figure 1. Tool J-48671-10 Injector Breakout Box

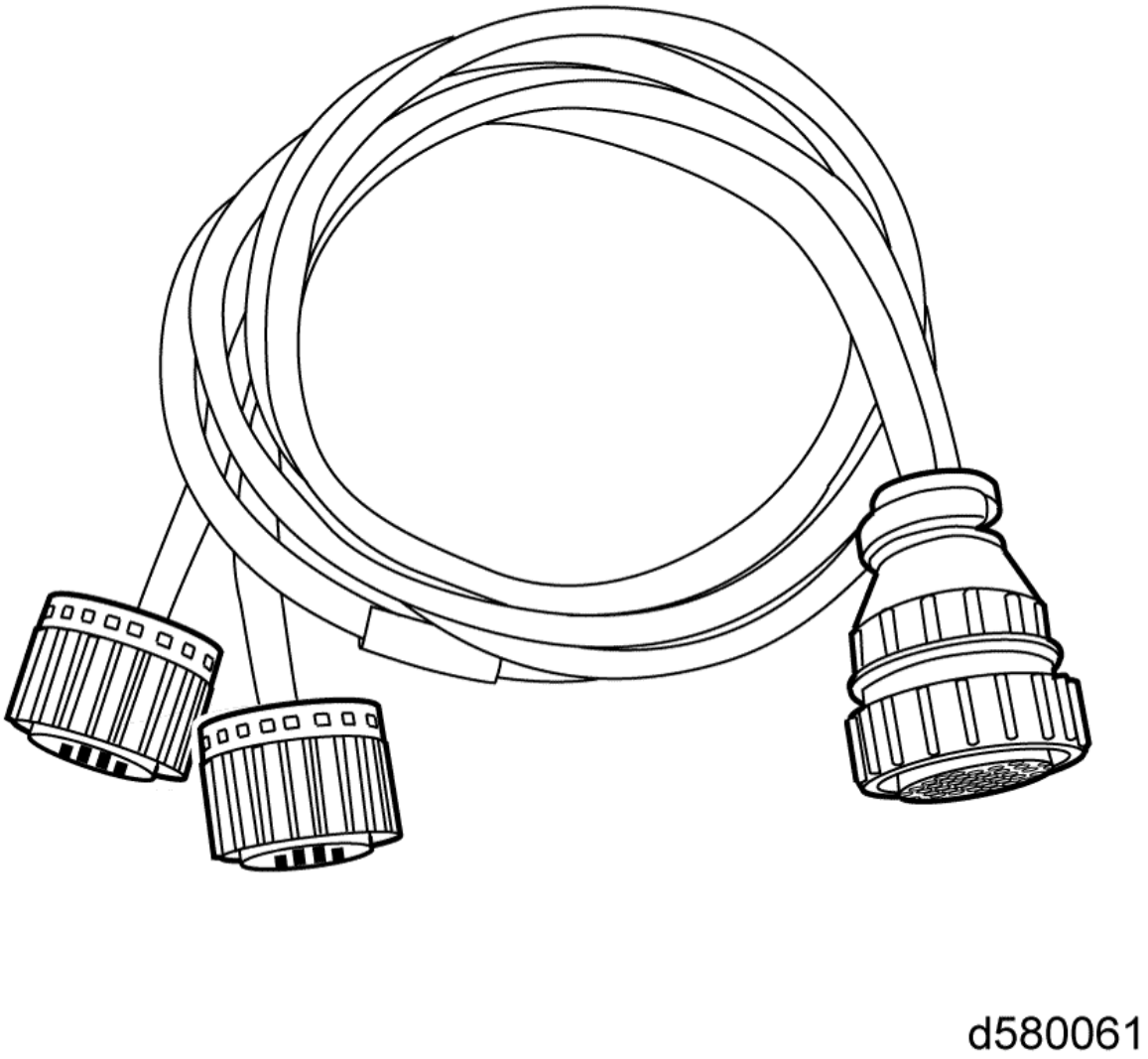
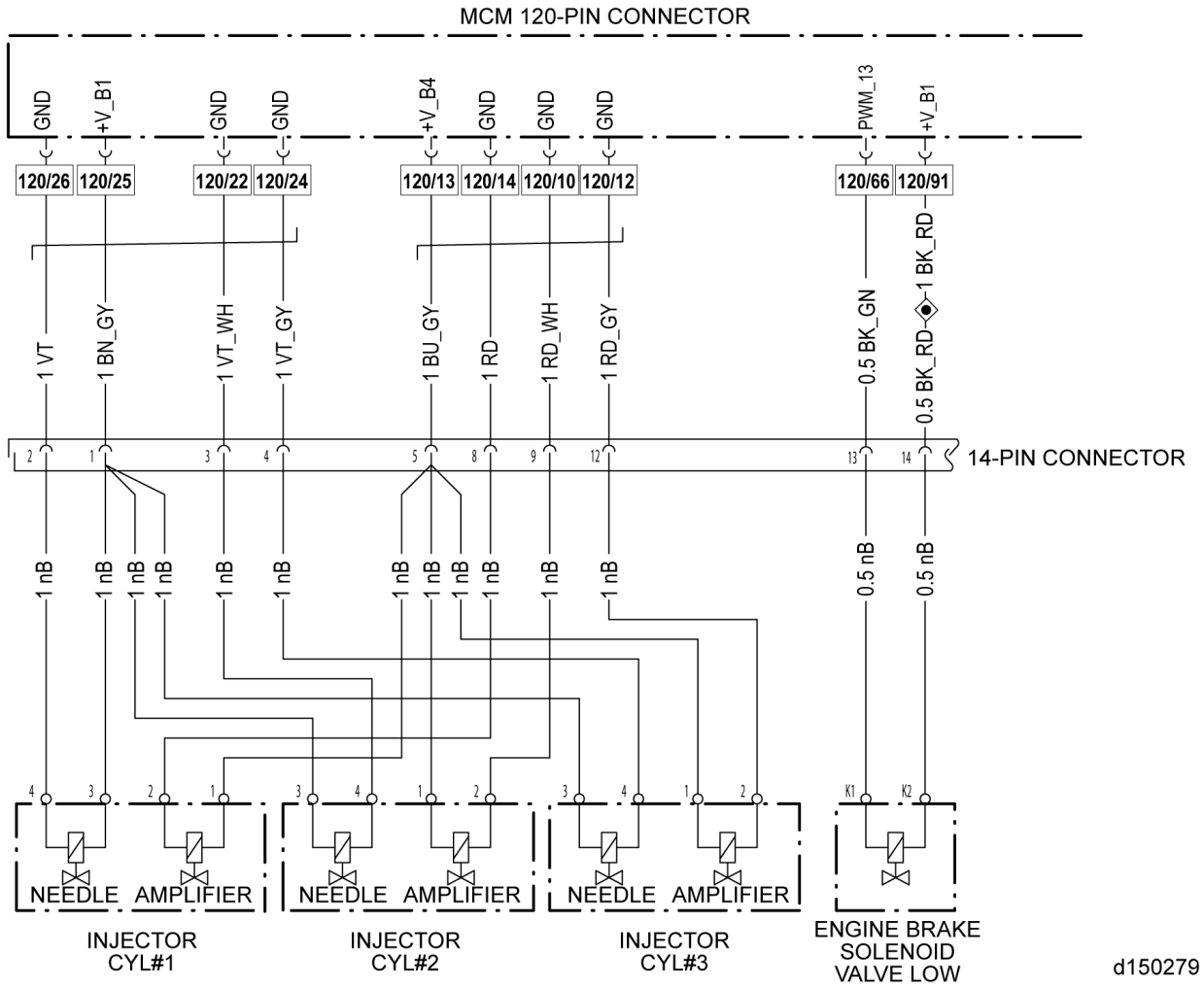
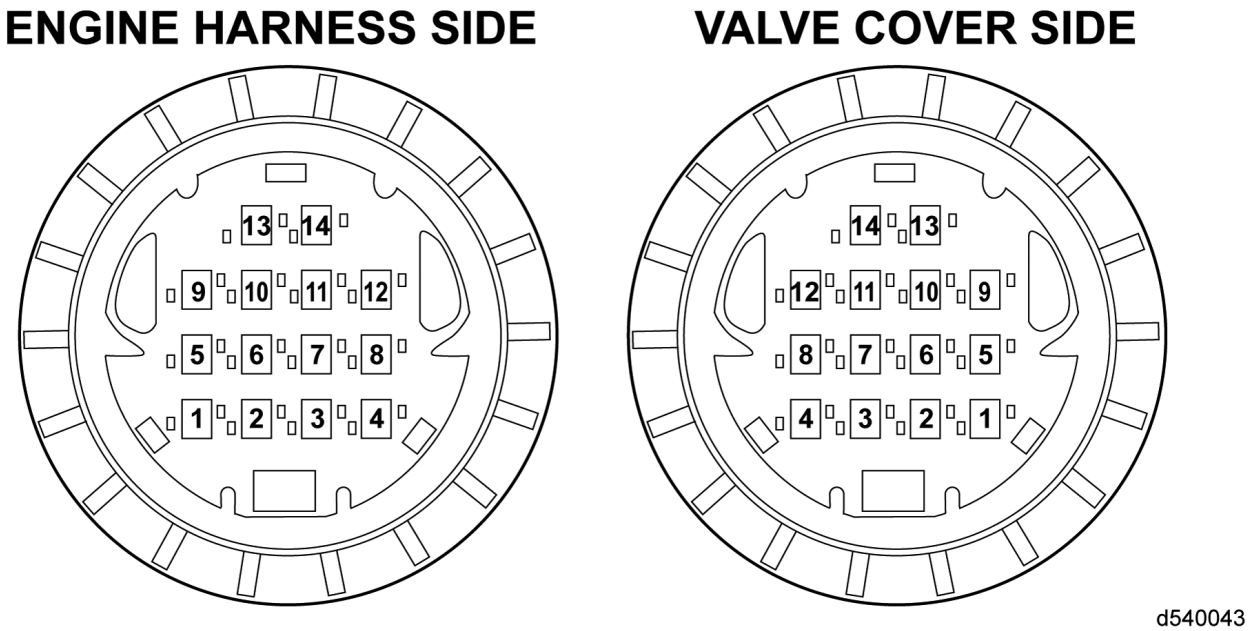


Figure 2. Tool J-48671-HDE DD13/15 Injector Breakout Box Harness Adaptor





Check as follows:

1. Connect DiagnosticLink™.

2. Turn the ignition ON (key ON, engine OFF).
3. Check the Motor Control Module (MCM) software level. Is the MCM software level 13.2.0.0 or higher?
    a. Yes; Go to step 5.
    b. No; update the MCM software and Go to step 4.

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.

WARNING: ENGINE EXHAUST

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

4. Start and run the engine at 1400 rpm for one minute. Does fault code SPN 4259/FMI 4 become active?
    a. Yes; Go to step 5.
    b. No; release the vehicle.
5. Turn the ignition OFF.
6. Disconnect the front fuel injector harness 14-pin electrical connector.
7. Inspect both sides of the front fuel injector harness 14-pin connectors for oil intrusion. Is there any oil present in the connectors?
    a. Yes; replace the under valve cover harness and clean the engine harness connector. Refer to section "Removal of the One-Piece Fuel Injector Wiring Harness - Three-Filter System". Verify repair.
    b. No; Go to step 8.
8. Inspect the front fuel injector harness 14-pin connectors for spread or damaged pins. Are there any spread or damaged pins?
    a. Yes; repair as necessary. Verify repair.
    b. No; Go to step 9.
9. Measure the resistance between pin 5 on the valve cover side of the front fuel injector harness 14-pin connector and ground. If you are using tools J-48671-10 and J-48671-HDE, measure between fuel injector #4 pin 1 and ground. Is the resistance less than 5 ohms?
    a. Yes; Go to step 10.
    b. No; Go to step 17.
10. Remove the rocker cover. Refer to section "Removal of the Rocker Cover".
11. Disconnect the electrical harness connecter on fuel injector #1.
12. Measure the resistance between pin 5 on the valve cover side of the front fuel injector harness 14-pin connector and ground. If you are using tools J-48671-10 and J-48671-HDE measure between fuel injector #1 pin 1 and ground. Is the resistance greater than 5 ohms?
    a. Yes; replace fuel injector #1. Refer to section "Removal of the Fuel Injector - Three-Filter System". Verify repair.
    b. No; Go to step 13.
13. Disconnect the electrical harness connecter on fuel injector #2.
14. Measure the resistance between pin 5 on the valve cover side of the front fuel injector harness 14-pin connector and ground. If you are using tools J-48671-10 and J-48671-HDE, measure between fuel injector #2 pin 1 and ground. Is the resistance greater than 5 ohms?
    a. Yes; replace fuel injector #2. Refer to section "Removal of the Fuel Injector - Three-Filter System". Verify repair.
    b. No; Go to step 15.
15. Disconnect the electrical harness connecter on fuel injector #3.
16. Measure the resistance between pin 5 on the valve cover side of the front fuel injector harness 14-pin connector and ground. If you are using tools J-48671-10 and J-48671-HDE, measure between fuel injector #3 pin 1 and ground. Is the resistance greater than 5 ohms?
    a. Yes; replace fuel injector #3. Refer to section "Removal of the Fuel Injector - Three-Filter System". Verify repair.

b. No; replace the under valve cover harness. Refer to section "Removal of the One-Piece Fuel Injector Wiring Harness - Three-Filter System". Verify repair.

17. Disconnect the 120-pin MCM connector.
18. Measure the resistance between pin 5 of the engine harness side of the front fuel injector harness 14-pin connector and ground. Is the resistance greater than 5 ohms?
    a. Yes; Go to step 19.
    b. No; repair the short to ground between pin 13 of the MCM 120-pin connector and pin 5 of the front fuel injector harness 14-pin connector. Verify repair.
19. Measure the resistance between pin 8 of the engine harness side of the front fuel injector harness 14-pin connector and ground. Is the resistance greater than 5 ohms?
    a. Yes; Go to step 20.
    b. No; repair the short to ground between pin 14 of the MCM 120-pin connector and pin 8 of the front fuel injector harness 14-pin connector. Verify repair.
20. Measure the resistance between pin 9 of the engine harness side of the front fuel injector harness 14-pin connector and ground. Is the resistance greater than 5 ohms?
    a. Yes; Go to step 21.
    b. No; repair the short to ground between pin 10 of the MCM 120-pin connector and pin 9 of the front fuel injector harness 14-pin connector. Verify repair.
21. Measure the resistance between pin 12 of the engine harness side of the front fuel injector harness 14-pin connector and ground. Is the resistance greater than 5 ohms?
    a. Yes; replace the MCM. Refer to section "Removal of the Motor Control Module". Verify repair.
    b. No; repair the short between pin 12 of the MCM 120-pin connector and pin 12 of the front fuel injector harness 14-pin connector. Verify repair.

