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## Service Information Bulletin

SUBJECT	DATE
SPN 677 (MCM)(EPA07) SPN 677 (MCM)(EPA10) SPN 677 (MCM)(GHG14)	April 2015

### Additions, Revisions, or Updates

Publication Number / Title	Platform	Section Title	Change
DDC-SVC-MAN-0084	DD Platform	SPN 677/ FMI 5 - EPA07	The diagnostic procedures have been updated, wiring diagrams have been added and a software update has been added for GHG14.
		SPN 677/ FMI 5 - EPA10	
		SPN 677/ FMI 5 - GHG14	



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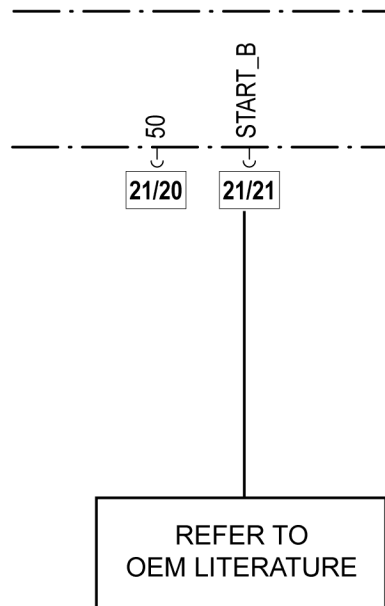
## 2 SPN 677/FMI 5 - EPA07

### Engine Starter Relay Open Circuit

**Table 1.**

SPN 677/FMI 5	
Description	This fault sets when then MCM detects that there is an open on the Engine Starter Relay circuit.
Monitored Parameter	Engine starter relay
Typical Enabling Conditions	Key On
Monitor Sequence	None
Execution Frequency	Continuous when enabling conditions met
Typical Duration	2 Seconds
Dash Lamps	MIL, CEL
Engine Reaction	No Start
Verification	Engine cranking

### MCM 21-PIN CONNECTOR



d150296

1. Turn the ignition OFF.
2. Disconnect the 21-pin Motor Control Module (MCM) electrical connector.

**NOTE:** refer to Original Manufacturer Literature for relay locations and wiring schematics.

3. Remove the engine starter relay.
4. Measure the resistance between pin 21 of the 21-pin MCM electrical connector harness side and the appropriate pin at the engine starter relay. Is the resistance greater than 5 ohms?
  - a. Yes; repair the open between pin 21 of the 21-pin MCM electrical connector harness side and the appropriate pin at the engine starter relay.

- b. No; replace the engine starter relay.

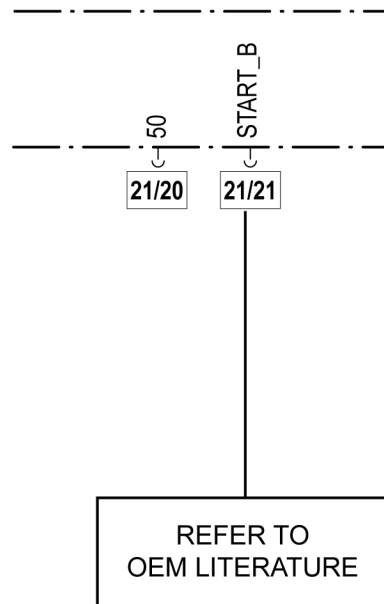
### 3 SPN 677/ FMI 5 - EPA10

#### Engine Starter Relay Open Circuit

**Table 2.**

SPN 677/FMI 5	
Description	This fault sets when then MCM detects that there is an open on the Engine Starter Relay circuit.
Monitored Parameter	Engine starter relay
Typical Enabling Conditions	Key On
Monitor Sequence	None
Execution Frequency	Continuous when enabling conditions met
Typical Duration	2 Seconds
Dash Lamps	MIL, CEL
Engine Reaction	No Start
Verification	Engine cranking

#### EPA10 MCM 21-PIN CONNECTOR



d150297

Check as follows:

1. Turn the ignition OFF.
2. Disconnect the 21-pin Motor Control Module (MCM) electrical connector.

**NOTE:** refer to Original Manufacturer Literature for relay locations and wiring schematics.

3. Remove the engine starter relay.
4. Measure the resistance between pin 21 of the 21-pin MCM electrical connector harness side and the appropriate pin at the engine starter relay. Is the resistance greater than 5 ohms?

- a. Yes; repair the open between pin 21 of the 21-pin MCM electrical connector harness side and the appropriate pin at the engine starter relay.
- b. No; replace the engine starter relay.

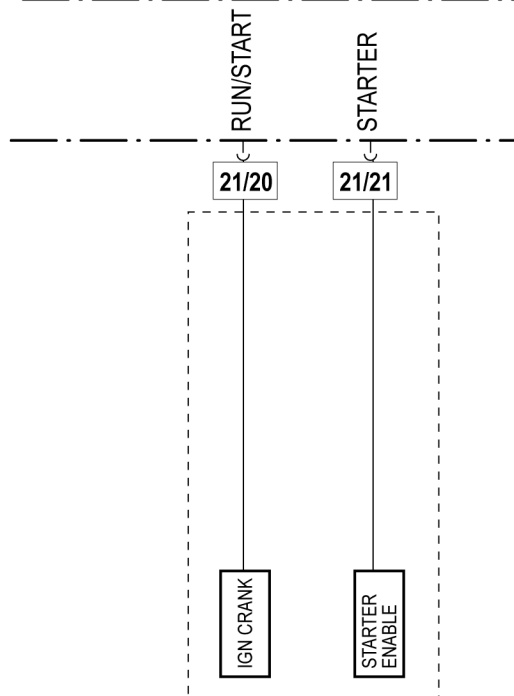
## 4 SPN 677/FMI 5 - GHG14

Engine starter relay open circuit

**Table 3.**

SPN 677/FMI 5	
Description	This fault sets when then MCM detects that there is an open on the Engine Starter Relay circuit.
Monitored Parameter	Engine starter relay
Typical Enabling Conditions	Key On
Monitor Sequence	None
Execution Frequency	Continuous when enabling conditions met
Typical Duration	2 Seconds
Dash Lamps	MIL, CEL, None after MCM update
Engine Reaction	No Start
Verification	Engine cranking

### GHG14 MCM 21-PIN CONNECTOR



d150298

Check as follows:

1. Turn the ignition OFF.
2. Disconnect the 21-pin Motor Control Module (MCM) electrical connector.

**NOTE:** refer to Original Manufacturer Literature for relay locations and wiring schematics.

3. Remove the engine starter relay.
4. Measure the resistance between pin 21 of the 21-pin MCM electrical connector harness side and the appropriate pin at the engine starter relay. Is the resistance greater than 5 ohms?

- a. Yes; repair the open between pin 21 of the 21-pin MCM electrical connector harness side and the appropriate pin at the engine starter relay. Go to step 5.
  - b. No; replace the engine starter relay. Go to step 5.
- 5. Check the MCM software level. Is the MCM software level 4.7.0.0 with fuel map ZGS 001 or higher?
  - a. Yes; release the vehicle to the customer.
  - b. No; update the MCM software and release the vehicle to the customer.