

B: Powertrain Control Module (PCM) Power Relay [B: Introduction](#)**B1 CHECK FOR DIAGNOSTIC TROUBLE CODES (DTCS)**

Is DTC P0562, P0563, P0685, P0689, or P0690 present?

Yes	No
For DTCs P0562 or P0563, GO to B2 .	GO to B2 .
For DTCs P0685 or P0690, GO to B8 .	
For DTC P0689, GO to B11 .	

B2 CHECK THE B+ AND IGN START/RUN VOLTAGE TO PCM POWER RELAY

- Ignition OFF.
- PCM Power Relay connector disconnected.
- Ignition ON, engine OFF.
- Measure the voltage between:

(+) PCM Power Relay Connector, Harness Side	(-)
B+	Ground
IGN START/RUN	Ground

Are the voltages greater than 10 V?

Yes	No
For Crown Victoria, Grand Marquis, Ranger, and Town Car, GO to B6 . For all others, GO to B3 .	REPAIR the open circuit. CLEAR the DTCs. REPEAT the self-test.

B3 CHECK THE PCMRC CIRCUIT FOR AN OPEN IN THE HARNESS

- Ignition OFF.
- PCM connector disconnected.
- Measure the resistance between:

(+) PCM Power Relay Connector, Harness Side	(-) PCM Connector, Harness Side
PCMRC	PCMRC

Is the resistance less than 5 ohms?

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Yes	No
GO to B4 .	REPAIR the open circuit. CLEAR the DTCs. REPEAT the self-test.

B4 CHECK THE PCMRC CIRCUIT FOR A SHORT TO VOLTAGE IN THE HARNESS

- Ignition ON, engine OFF.
- Measure the voltage between:

(+) PCM Connector, Harness Side	(-)
PCMRC	Ground

Is any voltage present?

Yes	No
REPAIR the short circuit. CLEAR the DTCs. REPEAT the self-test.	GO to B5 .

B5 CHECK THE ISP-R VOLTAGE AT THE PCM HARNESS CONNECTOR

- Ignition OFF.
- PCM Power Relay connector connected.
- Ignition ON, engine OFF.
- Measure the voltage between:

(+) PCM Connector, Harness Side	(-)
ISP-R	Ground

Is the voltage greater than 10 V?

Yes	No
GO to B7 .	REPAIR the open circuit. CLEAR the DTCs. REPEAT the self-test.

B6 CHECK THE PCM POWER RELAY GROUND CIRCUIT FOR AN OPEN

- Measure the voltage between:

(+) PCM Power Relay Connector, Harness Side	(-) PCM Power Relay Connector, Harness Side
B+	GND

Is the voltage greater than 10 V?

Yes	No
GO to B7 .	REPAIR the open circuit. CLEAR the DTCs. REPEAT the self-test.

B7 CHECK FOR AN OPEN VPWR CIRCUIT BETWEEN THE PCM AND POWER RELAY

- Ignition OFF.
- PCM connector disconnected.
- Measure the resistance between:

(+) PCM Power Relay Connector, Harness Side	(-) PCM Connector, Harness Side
VPWR	VPWR

Is the resistance less than 5 ohms?

Yes	No
INSTALL a new PCM Power relay. CLEAR the DTCs. REPEAT the self-test.	REPAIR the open circuit. CLEAR the DTCs. REPEAT the self-test.

B8 DTCS P0685 OR P0690: CHECK THE PCMRC CIRCUIT FOR A SHORT TO GROUND IN THE HARNESS

- Ignition OFF.
- PCM Power Relay connector disconnected.
- PCM connector disconnected.
- Measure the resistance between:

(+) PCM Connector, Harness Side	(-)
PCMRC	Ground

Is the resistance greater than 10K ohms?

Yes	No
GO to B9 .	REPAIR the short circuit. CLEAR the DTCs. REPEAT the self-test.

B9 CHECK THE ISP-R CIRCUIT FOR A SHORT TO VOLTAGE IN THE HARNESS

- Ignition OFF.
- Measure the voltage between:

(+) PCM Connector, Harness Side	(-)
ISP-R	Ground

Is any voltage present?

Yes	No
REPAIR the short circuit. CLEAR the DTCs. REPEAT the self-test.	GO to B10 .

B10 CHECK THE INJPWRM CIRCUIT FOR AN OPEN IN THE HARNESS

- INJ connector disconnected.
- Measure the resistance between:

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(+) PCM Connector, Harness Side	(-) INJ Connector, Harness Side
INJPWRM	VPWR

Is the resistance less than 5 ohms?

Yes	No
GO to B12 .	REPAIR the open circuit. CLEAR the DTCs. REPEAT the self-test.

B11 DTC P0689: CHECK THE ISP-R VOLTAGE AT THE PCM HARNESS CONNECTOR

- Ignition OFF.
- PCM connector disconnected.
- Ignition ON, engine OFF.
- Measure the voltage between:

(+) PCM Connector, Harness Side	(-)
ISP-R	Ground

Is the voltage greater than 10 V?

Yes	No
GO to B12 .	REPAIR the open circuit. CLEAR the DTCs. REPEAT the self-test.

B12 CHECK FOR CORRECT PCM OPERATION

- Ignition OFF.
- Disconnect all the PCM connectors.
- Visually inspect for:
 - pushed out pins
 - corrosion
- Connect all the PCM connectors and make sure they seat correctly.
- Carry out the PCM self-test and verify the concern is still present.

Is the concern still present?

Yes	No
INSTALL a new PCM. REFER to Section 2, Flash Electrically Erasable Programmable Read Only Memory (EEPROM) , Programming the VID Block for a Replacement PCM.	The system is operating correctly at this time. The concern may have been caused by a loose or corroded connector.
