

## A: Vehicle Battery

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### A1 DIAGNOSTIC TROUBLE CODES (DTCs) P0563/P0562/P0560

**Note:** DTC P0563 may be a temporary condition with a 24 volt jump start. DTC P0562 may be a temporary condition at crank with low battery condition.

Battery voltage must be above 11 V for all of the following tests.

- Key on, engine off.
- Measure voltage across battery terminals.

#### Is the voltage greater than 10.5 V?

Yes	No
F-Series and Excursion, GO to <a href="#">A2</a> . E-Series and F-650/750, GO to <a href="#">A8</a> .	REPAIR discharged battery. REFER to the Electrical Group in the Workshop Manual.

### A2 CHECK PCM VPWR FUSE

- Inspect PCM VPWR fuse 22 to verify it is not blown. Install a new fuse if necessary.
- Measure voltage from PCM VPWR fuse 22 and battery negative post.

#### Is the voltage greater than 10.5 V?

Yes	No
GO to <a href="#">A6</a> . If a new fuse was installed, RESTORE vehicle and RETEST.	GO to <a href="#">A14</a> .

### A3 CHECK SUPPLY VOLTAGE TO PCM RELAY

- Remove PCM relay and fuse.
- Key on, engine off.
- Check voltage from PCM relay power supply terminal (30) in PDJB and battery negative post.

#### Is the voltage greater than 10.5 V?

Yes	No
GO to <a href="#">A4</a> .	REPAIR open in PCM power supply circuit or fuse links. RESTORE vehicle and RETEST.

### A4 CHECK PCM RELAY COIL GROUND CIRCUIT

- Key off.

- Measure resistance from PCM relay coil ground terminal (86) in PDJB and battery negative post.

Is the resistance less than 5 ohms?

Yes	No
GO to <a href="#">A5</a> .	<b>Note:</b> PCM diode is internal to PDJB.  REPAIR open in relay ground circuitry. RESTORE vehicle and RETEST.

## A5 CHECK PCM RELAY IGNITION VOLTAGE SUPPLY

- Key on, engine off.
- Check voltage from PCM relay coil ignition voltage supply terminal (85) in PDJB and battery negative post.

Is the voltage greater than 10.5 V?

Yes	No
GO to <a href="#">A6</a> .	REPAIR open in ignition power circuit to PCM relay, fuse 116 or PDJB. RESTORE vehicle and RETEST.

## A6 CHECK CIRCUIT 361 FROM PCM FUSE TO PCM

- Key off.
- Install breakout box. PCM disconnected.
- Measure resistance from non-power side of PCM fuse 22 and PCM test pins 71 and 97.

Is the resistance less than 5 ohms?

Yes	No
GO to <a href="#">A7</a> .	REPAIR open in VPWR circuit 361 between fuse and PCM. RESTORE vehicle and RETEST.

## A7 CHECK POWER GROUND CONTINUITY

- Measure resistance between battery negative post and PCM test pins 25, 51, 77 and 103.

Is each resistance less than 5 ohms?

Yes	No
CHECK PCM relay for correct operation. If relay is good and fault code reappears, INSTALL a new PCM. RESTORE vehicle and RETEST.	REPAIR open in PWR GND circuitry. RESTORE vehicle and RETEST.

## A8 CHECK VOLTAGE AT PCM FUSE

- Measure voltage between power distribution box PCM fuse and battery negative post.
- Key off.

**Is the voltage greater than 10.5 V?**

Yes	No
GO to <a href="#">A9</a> .	REPAIR open in B+ circuit between the power distribution box and the starter relay. RESTORE vehicle.

**A9 CHECK PCM FUSE**

- Check power fuse.

**Is fuse OK?**

Yes	No
GO to <a href="#">A10</a> .	REPAIR short condition. INSTALL a new PCM fuse. RESTORE vehicle.

**A10 CHECK POWER CIRCUIT TO RELAY**

- Remove PCM relay and fuse.
- Measure resistance of PCM power circuit (80) between the non-power side of fuse and the PCM relay connector.

**Is the resistance less than 5 ohms?**

Yes	No
GO to <a href="#">A11</a> .	REPAIR open in circuit. RESTORE vehicle.

**A11 CHECK IGNITION FEED TO PCM RELAY DIODE**

- Key off.
- Remove PCM relay diode from power distribution box.
- Key on, engine off.
- Measure voltage between battery ground and ignition feed side of diode connector in power distribution box.

**Was voltage greater than 10.5 V?**

Yes	No
GO to <a href="#">A12</a> .	REPAIR open in ignition feed circuit 16 (RD/LG) or ignition switch. RESTORE vehicle.

**A12 CHECK DIODE**

- Key off.
- Inspect and test diode.

**Does diode check OK?**

Yes	No

GO to [A7](#) .

INSTALL a new diode. RESTORE vehicle and RETEST.

**A13 CHECK PCM RELAY COIL CIRCUIT**

- Measure resistance of coil circuit between the non-power side of diode connector and the PCM relay connector in power distribution box.

Is the resistance less than 5 ohms?

Yes	No
GO to <a href="#">A8</a> .	REPAIR open in PCM relay coil power circuit. RESTORE vehicle.

**A14 CHECK PCM RELAY COIL GROUND**

- Measure resistance between battery ground and PCM relay coil ground circuit at PCM relay connector.

Is the resistance less than 5 ohms?

Yes	No
GO to <a href="#">A15</a> .	REPAIR open in circuit 57 (BK). RESTORE vehicle.

**A15 CHECK CIRCUIT 361 (RD) FROM RELAY TO PCM**

- Install breakout box, leave PCM disconnected.
- Measure resistance of circuit 361 (RD) between the PCM relay connector and PCM test pins 71 and 97.

Is the resistance less than 5 ohms?

Yes	No
GO to <a href="#">A16</a> .	REPAIR open in circuit 361 (RD). RESTORE vehicle.

**A16 CHECK PWR GND CIRCUIT CONTINUITY**

- Measure resistance between battery negative post and PCM test pins 25, 51, 77 and 103.

Is each resistance less than 5.0 ohms?

Yes	No
GO to <a href="#">A11</a> .	REPAIR open in PWR GND circuit. RESTORE vehicle. CLEAR DTCs and RETEST.

**A17 CHECK PCM RELAY**

- Install PCM relay. PCM disconnected.

- Install PCM relay diode.
- Remove PCM relay power fuse.
- Key on, engine off.
- Measure resistance between PCM test pins 71 and 97 and the non-power side of PCM power fuse.

**Is the resistance less than 5 ohms?**

<b>Yes</b>	<b>No</b>
If fault code is still present, INSTALL a new PCM. RESTORE vehicle.	INSTALL a new PCM relay. RESTORE vehicle.

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