

KG: Tachometer[← KG: Introduction](#)**KG1 TACHOMETER INOPERATIVE: CHECK FUSE**

Note: For F-Series and Excursion cluster diagnosis, refer to the appropriate Workshop Manual section. For F-650/750, continue.

- Check tachometer fuse.

Is the fuse blown?

Yes	No
REPAIR short to ground. INSTALL a new fuse. TEST system for normal operation.	GO to KG2 .

KG2 CHECK GROUND TO TACHOMETER

- Disconnect small black instrument cluster harness connector.
- Measure resistance of circuit 57 (BK) between pin 1 on the small black instrument cluster harness connector and ground.

Is the resistance less than 5 ohms?

Yes	No
GO to KG3 .	REPAIR open in circuit 57 (BK). RESTORE vehicle. TEST system for normal operation.

KG3 CHECK POWER TO TACHOMETER

- Disconnect large white instrument cluster harness connector.
- Key on, engine off.
- Measure voltage of circuit 640 (RD/YE) between pin 6 on the large white instrument cluster harness connector and ground.
- Key off.

Is the voltage greater than 10.5 V?

Yes	No
GO to KG4 .	REPAIR open in circuit 640 (RD/YE). RESTORE vehicle. TEST system for normal operation.

KG4 CHECK SIGNAL CIRCUIT OUTPUT

- Use the scan tool plugged into the data link connector (DLC) and two jumpers, one plugged between the COM port of

the scan tool to pin 1 (ground) on the small black connector for the cluster, the other jumper plugged between the SIG port of the scan tool to pin 4 (tach signal) on the large white connector for the cluster.

- Key to start, engine running.
 - with scan tool, select VEHICLE and ENGINE
 - select DIGITAL MEASUREMENT SYSTEM
 - change level to 4 VOLT DC
 - press the LINK button to choose a PID
 - select PID/DATA MONITOR
 - select the RPM PID
 - press START
- Take three readings at 650 rpm, 1500 rpm and 3000 rpm.
- Key off.

Did the readings match the table listed below?

Step No.	RPM	Frequency
1	650	43 ± 10 Hz
2	1500	100 ± 10 Hz
3	2500	170 ± 10 Hz

Yes	No
INSPECT printed circuit board for damaged or open circuits. If damaged or open circuits are present, INSTALL a new printed circuit board. If OK, INSTALL a new tachometer. RESTORE vehicle. TEST system for normal operation.	GO to KG5 .

KG5 CHECK FOR OPEN IN TACH SIGNAL CIRCUIT

- Install breakout box; leave PCM disconnected.
- Measure resistance of circuit 648 (WH/PK) between pin 4 on the large white instrument cluster harness and PCM test pin 19.

Is the resistance less than 5 ohms?

Yes	No
GO to KG6 .	REPAIR open in circuit 648 (WH/PK). RESTORE vehicle. TEST system for normal operation.

KG6 CHECK FOR SHORT TO GROUND IN TACH SIGNAL

- Measure resistance of circuit 648 (WH/PK) between pin 4 on the large white instrument cluster harness connector and ground.

Is the resistance greater than 10,000 ohms?

Yes	No
GO to KG7 .	REPAIR short to ground on circuit 648 (WH/PK). RESTORE vehicle. TEST system for normal operation.

KG7 CHECK SHORT TO POWER IN TACH CIRCUIT

- Key on, engine off.
- Measure voltage of circuit 648 (WH/PK) between pin 4 on the large white instrument cluster harness connector and ground.

Is the voltage greater than 10.5 V?

Yes	No
REPAIR short to power in circuit 648 (WH/PK). RESTORE vehicle. TEST system for normal operation.	INSTALL a new PCM. RESTORE vehicle. TEST system for normal operation.
