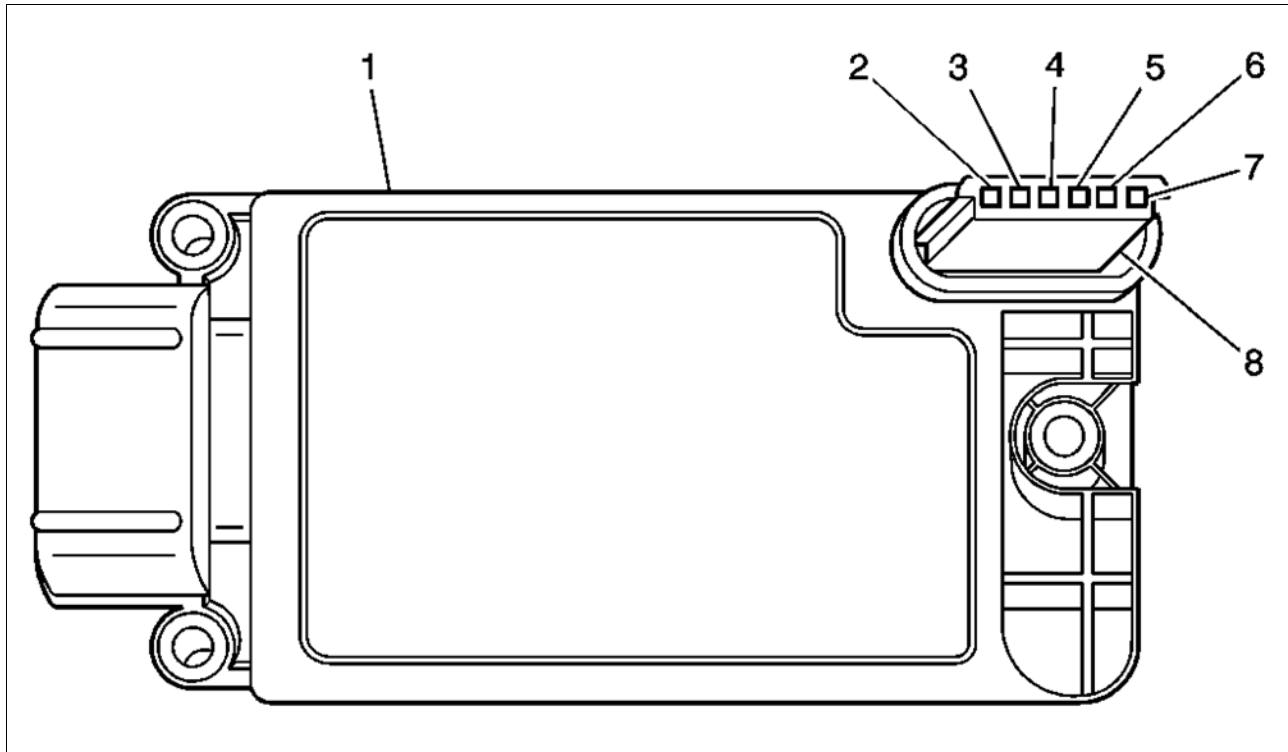


Ignition Control Module (ICM) And Ignition Coils

Fig 1: Ignition Control Module (ICM) & Ignition Coils



Courtesy of GENERAL MOTORS CORP.

Callout	Component Name
1	Ignition Control Module (ICM)
2	Compression Sense Ignition (CSI) Pickup
3	Not Used
4	2-3 Coil Control
5	Ignition Voltage
6	1-4 Coil Control
7	Not Used
8	Interconnect

The powertrain control module (PCM) supplies a signal on each of the ignition control (IC) timing control circuits to the ignition control module (ICM). The ICM fires the correct ignition coil at the correct time based on the signals. The ICM detects if cylinder 1 or cylinder 3 is on the compression stroke by sensing the secondary voltage and polarity of each side of the ignition coil. The ICM detects this voltage with sensing circuitry integrated into each ignition coil. The higher voltage is on the compressing cylinder. This is called compression sense ignition. The ICM provides a synthesized cam signal to the PCM based on these inputs. The PCM uses the cam signal to synchronize fuel injection.

This system consists of the following circuits:

- An ignition voltage circuit
- A ground circuit
- A camshaft position (CMP) sensor signal circuit
- An IC timing control circuit for cylinders #1 and #4
- An IC timing control B circuit for cylinders #2 and #3