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/ / / / / / / *Tech Tip* / / / / / / /

## **Relationship: Programmer and PCM/ECM/BCM**

### THE WAY IT WORKS:

We have received several calls from technicians concerning the relationship between the Programmer and the PCM/ECM/BCM. I am going to express this in its simplest form.

### Let's give some definitions first:

- Programmer: The panel that sits in the dash and controls the ON/OFF, and BLOWER SPEEDS of the A/C, heater.
- PCM: Power Train Control Module.
- BCM: Body Control Module.
- ECM: Electronic Control Module.
- Pressure Switch/Sensor: All cars have some device(s) to tell high side and or low side pressure. These are either in the form of an ON/OFF switch, or a sensor that measures the pressure.

### The Process:

- A person selects A/C on the Programmer.
- The Programmer then usually samples the pressure switch/sensor, and tells the PCM/BCM/ECM that someone wants the A/C to operate.
- Why PCM/BCM/ECM? The different systems do the job different ways by using the PCM on some models, the BCM on some, and the ECM on others. It all depends on how the engineer designed the a/c system to operate.
- The PCM/BCM/ECM will be referred to as the CONTROL MODULE for the rest of the article.
- The CONTROL MODULE recognizes the signal from the Programmer.
- The Control Module checks all the sensors (power steering, temp, throttle position, etc...) to check that they are within specification.
- The Control Module then activates the relay that controls the compressor.

**Not all systems use the CONTROL MODULE to provide a ground to the Programmer. It is very important to refer to the Original Manufacturer for the proper diagnosis and repair procedure. Simple point to point testing may not be appropriate. The Control Module signal maybe an on/off voltage, low voltage, ohm, or even a ground.**