1970-71 FORD MOTOR CO. ELECTRONIC DISTRIBUTOR MODULATOR

DESCRIPTION & OPERATION

The Electronic Distributor Modulator reduces engine emissions through close control of distributor spark advance during specified conditions of acceleration and deceleration. System consists of four major components: a speed sensor, a thermal switch, an electronic control amplifier and a three-way solenoid valve controlling vacuum applied to the distributor. Control amplifier and solenoid valve are combined as a single unit and mounted inside passenger compartment on dash panel. Speed sensor is connected to speedometer cable. Thermal switch is mounted near front door hinge pillar on outside of cowl panel. It may be mounted on either right or left side. The modulator operates to prevent spark advance below a specified speed when accelerating and also prevents advance below a specified value on deceleration. Operating speeds vary according to engine. (see specifications below).

Electronic Control Module Specifications

Engine	Cut In Speed (MPH)
1970-71 240" 6 Cyl.	23±2.3
1971 200" & 250" 6 Cyl.	23±2.3
1970 302" 2-Bbl.	28±2.8
1970 351" 4-Bbl.	23±2.3
1970-71 390" 2-Bbl.	23±2.3
1971 429" & 460" 4-Bbl.	28±2.8

Cut Out Speed (All Engines) – 18 MPH.

Thermal Switch Specifications

Close	58°F Min.
Open	68°F Max.

Speed Sensor Specifications

Resistance	40-60 Ohms @ Room Temperature
Coil to Case Resistance	Open Circuit

TESTING

System should be checked when loss of engine performance and excessive fuel comsumption are reported. Road test symtoms will be those of retarded ignition timing. To check the system:

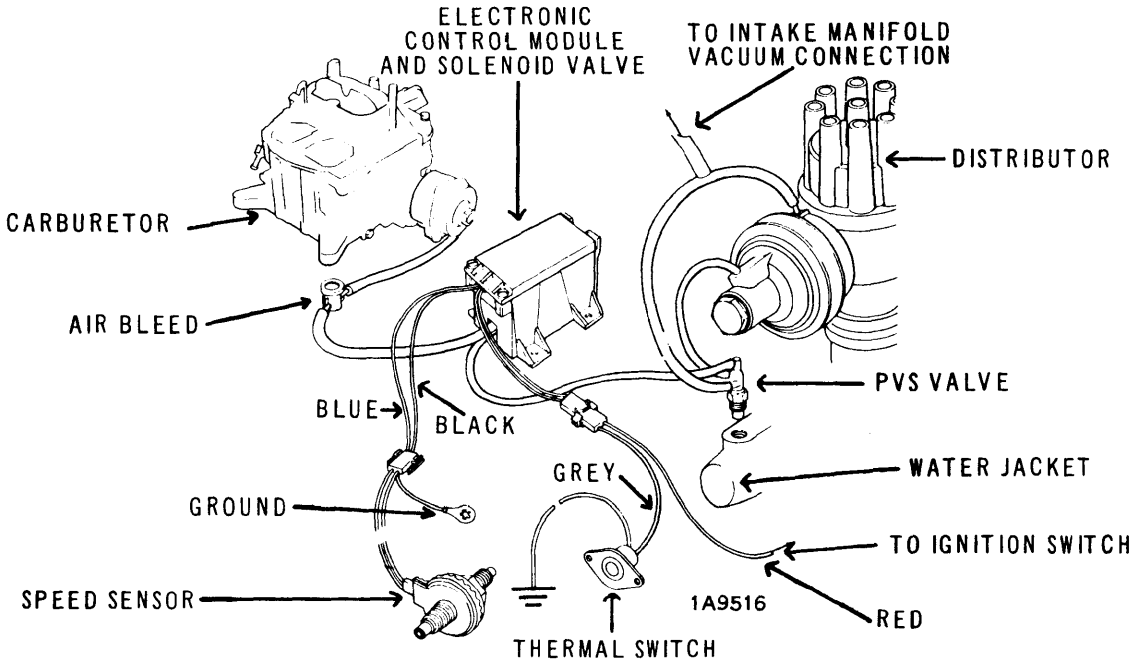
1) Start engine, run at 1500 RPM and check for vacuum at carburetor. Note vacuum reading and reconnect vacuum hose.

2) By-pass distributor modulator hoses at rear of engine and connect vacuum gauge to distributor primary, observe vacuum reading. If vacuum is not apparent or is considerably less than in step **1)**, check for pinched and/or leaking hoses (or lines) on engine.

3) If vacuum in step **2)** is approximately the same as in step **1)**, remove by-pass and connect vacuum hoses from firewall to rear of engine. Run engine until warm and at normal idle. *NOTE – Make sure thermal switch is above 65° F.* Raise rear wheels, slowly accelerate to 34 MPH. If vacuum occurs between 23-30 MPH, system is function-properly.

4) If vacuum occurs before 20 MPH or at start of acceleration, check electrical connections inside vehicle leading to modulator box. Disconnect thermal switch and recheck vacuum. If vacuum is present, replace modulator assembly. If no vacuum, replace thermal switch.

5) If there was no vacuum in step **3)**, check electrical and hose connections inside vehicle leading to modulator box. If connections are unsatisfactory, repair as required. If If connections are satisfactory, replace distributor modulator assembly and recheck vacuum. If still no vacuum, replace sensor.



DISTRIBUTOR MODULATOR SYSTEM