General Motors Reference

Subject: Mass airflow (MAF) relays and MAF troubleshooting for 1986–88 5.0L and 5.7L fuel-injected V8 engines (VIN codes F and 8)

Symptom: Code 33, 34, or 36 (any or all, hard or soft); rough running, hard starting, engine surge, stalling

Source: GM divisional service bulletins:
Chevrolet—87-270-6E (January 1988); 87-298-6E (September 1988)
Pontiac—85-6(Gas)-56 (December 1985), -58 (February 1986),
86-6(Gas)-57 (August 1986), 87-6(Gasoline)-31 (April 1987),
87-6(Gas)-91 (August 1988), 8-327-6D (May 1991), 89-327-6D (July 1991)

Follow these steps to troubleshoot a code 33, 34, or 36 (including possible false codes) on any of the subject engines with MAF sensors:

1. Make sure the latest design MAF power relay and burnoff relay are installed. Improved relays were released as service replacements for older models. The correct part numbers are as follows:

Year	Model	Power Relay	Burnoff Relay
1986	Corvette	10067925	10094701
1986–87	Camaro, Firebird	10067925	10094701
1987–89	Corvette	14089936	14089936

   Additionally, the improved power relays have orange lettering on top of the relay housing. The improved burnoff relays have rubber extensions, except on 1987 Corvettes, which use Bosch relays. Double-check the part numbers to ensure correct identification. GM and Bosch Relays also can be distinguished by the shape of the relay case (Figure G007-1).

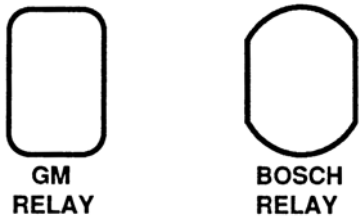

Figure G007-1 *Relay Identification*

2. On 1986 Corvette and 1986-87 Camaro and Firebird, make sure that the correct relay is installed in each location and that the relay connectors have not been switched.

   Power relay wire colors are:

   - dark blue
   - orange
   - black with white stripe
   - red
   - tan with white stripe

3. Check voltage drop across the MAF power relay contacts. It should be 0.2 volt or less.

   Also check for lack of current flow (excessive voltage drop) across the contacts of the MAF power relay and the burnoff relay with a 12-volt test light as shown. Check circuit 993 for proper operation of the power relay and circuit 994 for proper operation of the burnoff relay. If the test light is dimmer than normal when connected to the relays as explained below, the relay may be faulty.

4. To duplicate an intermittent failure, you may need to cycle the relays several times:

   a. Cycle the power relay by starting the engine to close the relay then stopping the engine to open it. The test light should light as the relay closes and not light when the relay is open.

   b. Cycle the burnoff relay by running the engine to normal operating temperature in closed loop and then shutting it off. The test light should light for a few seconds after the engine stops as power is applied through the burnoff relay to the MAF sensor. You also can energize the burnoff relay by momentarily grounding circuit 900. Do not energize the relay for more than a few seconds or the MAF sensor may be damaged by high current.

If the correct relays are installed and operating properly, check the other items listed on the Fast-Track® Troubleshooter.

Figure G007-2 is a typical diagram of the MAF sensor circuit for a V8 engine, which may help in diagnosis. Also refer to individual wiring diagrams for the specific vehicle being serviced. Follow the GM diagnostic procedure for the code and model year of the vehicle.

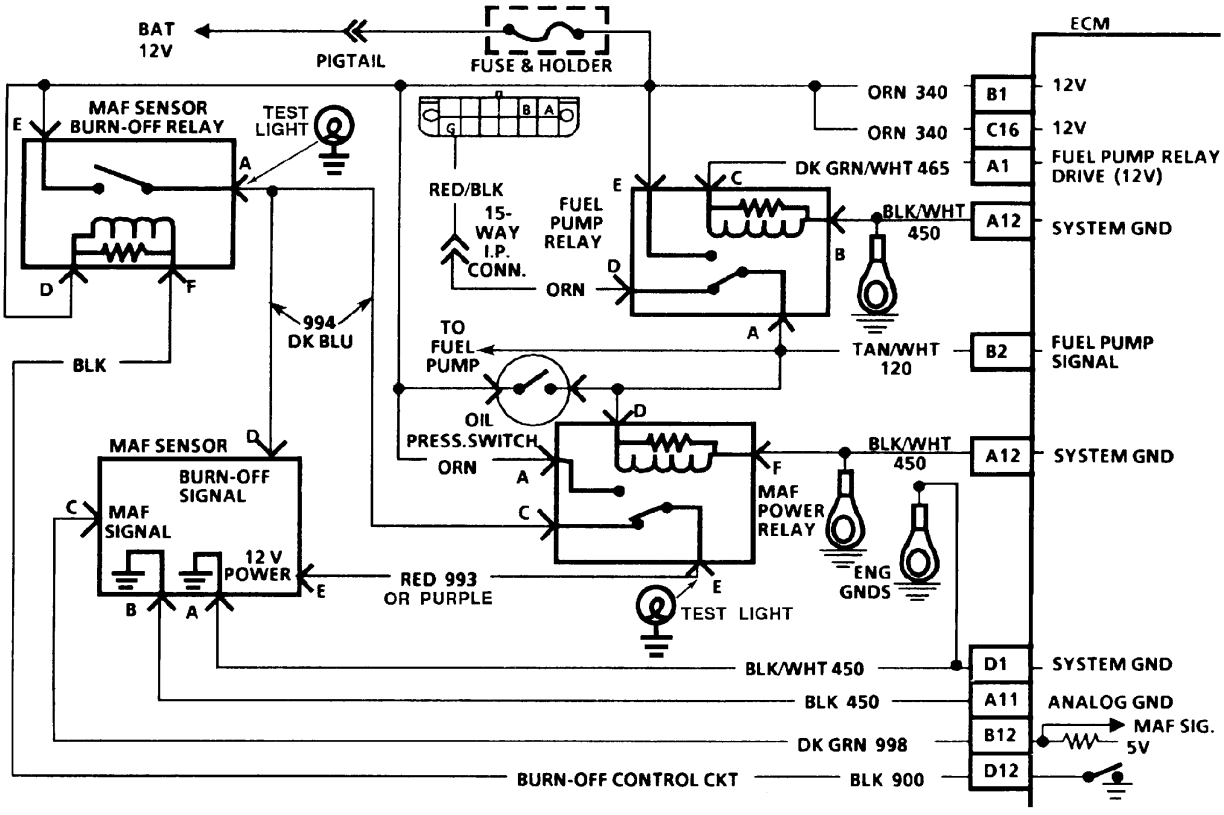

Figure G007-2 *Typical MAF sensor circuit*