ETM Throttle Failure Diagnostic Flow Chart
1999-2000 Volvo C70, S70, V70 and XC70

START HERE

Connect OBDII code reader to the car and retrieve the diagnostic trouble codes (DTC). If you don’t have this tool, take your car to Auto-Zone and they will scan it for you for free. Are there any codes related to the Mass Air Flow sensor?

Are there any misfire codes stored?

Switch the ignition on, but don’t start the engine. Pull fuse #2 out (see Fig.2). Put the fuse back in. The ETM should click on and whine for 6 sec before shutting off. Does the ETM switch on when the fuse is re-installed?

Measure voltage across pins 5 and 6 on the engine side of the ETM plug (Fig 1) Is the voltage equal to the battery voltage?

Is your car turbocharged?

Connect one lead to the fuse#2 and the other lead to the positive (+) battery terminal. Is the voltage equal to the battery voltage?

Replace the ETM.

Yes, but it clicks on and off repeatedly

Replace the Engine Management Relay (see Fig 2).

I could not find any vacuum leaks.

Is the problem intermittent?

Are there any ETM TPS sensor codes stored?

Replace the ETM.

NO

YES

NO

YES

Diagnose and repair all misfire codes first. A malfunctioning ETM will not set misfire codes.

Inspect all plastic and rubber intake hoses especially the plastic elbow pipe that connects to the ETM (Turbo models). Touch the pipe on the bottom side, see if it feels soft and replace it if necessary. Check upper intercooler rubber hose for splits on the bottom side. Tip: To find a vacuum leak, start the engine and spray some brake cleaner around all intake connections. Engine will stumble if a leak is found.

Connect one lead to pin 5 and the other to the positive (-) battery post. Is the voltage equal to the battery voltage?

Replace the Engine Management Relay.

Connect OBDII code reader to the car and retrieve the diagnostic trouble codes (DTC). If you don’t have this tool, take your car to Auto-Zone and they will scan it for you for free. Are there any codes related to the Mass Air Flow sensor?

Are there any ETM TPS sensor codes stored?

Switch the ignition on, but don’t start the engine. Pull fuse #2 out (see Fig.2). Put the fuse back in. The ETM should click on and whine for 6 sec before shutting off. Does the ETM switch on when the fuse is re-installed?

Measure voltage across pins 5 and 6 on the engine side of the ETM plug (Fig 1) Is the voltage equal to the battery voltage?

NO

YES

Is your car turbocharged?

Connect one lead to pin 5 and the other to the positive (+) battery terminal. Is the voltage equal to the battery voltage?

Replace the Engine Management Relay.

Yes, but it clicks on and off repeatedly

Replace the Engine Management Relay.

I could not find any vacuum leaks.

Are there any misfire codes stored?

Diagnose and repair all misfire codes first. A malfunctioning ETM will not set misfire codes.

Inspect all plastic and rubber intake hoses especially the plastic elbow pipe that connects to the ETM (Turbo models). Touch the pipe on the bottom side, see if it feels soft and replace it if necessary. Check upper intercooler rubber hose for splits on the bottom side. Tip: To find a vacuum leak, start the engine and spray some brake cleaner around all intake connections. Engine will stumble if a leak is found.

Connect one lead to pin 5 and the other to the positive (-) battery post. Is the voltage equal to the battery voltage?

Replace the Engine Management Relay.

There is an open circuit within power supply wire (green/white) from fuse #2 to pin #6 on the connector plug. To remedy the problem either open up engine harness and locate the cramped wire splice (see Fig 3) close to the fuse box, or run your own wire between the fuse and the plug.

Check Mass Air Flow (MAF). A defective MAF can produce very similar symptoms as the ETM. Connect the OBDII scanner and check for codes. If there are any MAF related codes, replace the MAF sensor. In the monitoring function of the scanner select MAF signal and observe the MAF value. The reading should be around 14 Kg/Hr at idle.