FIGURE 21–1 A typical TP sensor mounted on the throttle plate of this port-injected engine.

FIGURE 21–2 The signal voltage from a throttle position increases as the throttle is opened because the wiper arm is closer to the 5-volt reference. At idle, the resistance of the sensor winding effectively reduces the signal voltage output to the computer.

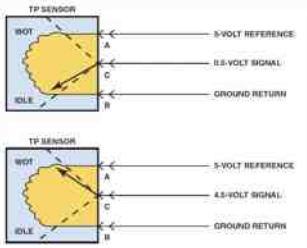

FIGURE 21–3 A meter lead connected to a T-pin that was gently pushed along the signal wire of the TP sensor until the point of the pin touched the metal terminal inside the plastic connector.

FIGURE 21–4 A typical waveform of a TP sensor signal as recorded on a DSO when the accelerator pedal was depressed with the ignition switch on (engine off). Clean transitions and the lack of any glitches in this waveform indicate a good sensor. *(Courtesy of Fluke Corporation)*

FIGURE 21–5 Checking the 5-volt reference from the computer being applied to the TP sensor with the ignition switch on (engine off).

FIGURE 21–6 Checking the voltage drop between the TP sensor ground and a good engine ground with the ignition on (engine off). A reading of greater than 0.2 volt (200 mV) represents a bad computer ground.