

Injectronics

TECHNICAL BULLETIN

FORD – FALCON EA CFI

#T0009

Make: Ford

Model: Falcon EA CFI

Subject: Idle speed faults & reset procedure

At Injectronics, we are often asked a wide variety of questions in regards to Idle Control faults on the EA/EB Falcon throttle body injection system. These faults include high idle speed, engine slow to return to idle and engine running on when ignition is turned off. Often these faults occur after a battery has been disconnected or the ECM power supply has been interrupted, causing the need for the ECM to relearn certain input parameters such as TPS position etc to control idle correctly.

Before the ECM relearn procedure is performed a quick check of the ECM fault codes, base timing and engine tune should be done. Once this has been completed the base idle needs to be checked / reset as follows. With engine idling at operating temperature, all accessories off and the transmission in park or neutral, install a 10mm spacer between the throttle linkage and the idle speed motor causing the motor to retract. With the motor retracted, disconnect the wiring harness to the motor and remove the spacer. Adjust the base idle speed to 550rpm using the throttle plate adjusting screw then reconnect the wiring harness to the idle speed motor. To perform the ECM relearn allow the engine to idle in gear or with clutch fully depressed for 2 minutes. The vehicle should then be taken on a test drive involving various speeds and idle situations, in and out of gear with A/C on and off.

If the idle speed relearn is unsuccessful, other faults may exist with relevant idle control components that must be corrected before the relearn procedure can be retried. The throttle position sensor (TPS) output voltage is monitored by the ECM which needs to see the same voltage to within 0.1v each time the throttle is closed. This voltage should be set with the ignition on, engine off to approx. 0.8v at ECM pin number 47. The power steering pressure switch (PSPS), is monitored by the ECM to allow idle speed compensation for when the power steering load is applied. The signal from the power steering pressure switch should change from 0v to approx. 8V at ECM pin number 6 when the power steering is operated.

The neutral drive switch is located on the transmission and sends a signal to the ECM as to whether or not the transmission is in gear. This signal is used by the ECM to raise idle speed when extra engine load (due to the transmission being in gear) is applied. When in neutral / park the output voltage should be 5v. When in gear the circuit is grounded and the output voltage should be 0v at ECM pin number 30. The idle tracking switch (ITS) is integrated into the D.C Motor (Throttle Nudger) and is open whenever the throttle is closed. With the ignition on, engine off, 12 volts should be seen on ECM pin number 24 when the throttle is closed and 0 volts as soon as the throttle is opened. Other causes of idle faults can be attributed to vacuum leaks, engine gasket leaks affecting the operation of the PCV system, the canister purge solenoid stuck open and fluctuations in fuel pressure. A code extraction should be performed which may show logged fault codes for an intermittent or constantly faulty TPS sensor or power steering switch etc.