Injectronics

Remanufactured Automotive Electronics Components

TECHNICAL BULLETIN

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Make: Holden

Model: VS Commodore

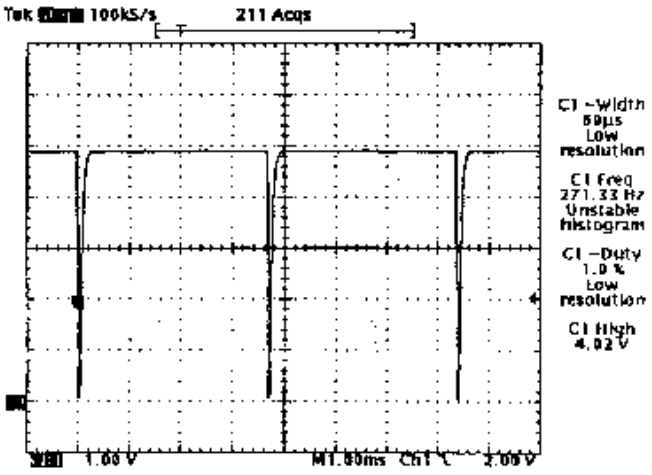
Subject: Mass air flow sensor testing

Unlike earlier Commodores the VS Commodore engine management system utilises a Mass Air Flow (MAF) sensor to measure the Air Mass entering the engine. Internally the MAF employs 2 heated elements, an ambient temperature sensor and outputs a frequency rather than a varying voltage.

The MAF sensor provides a switching (pulse) to ground. This pulse size remains constant at approximately 50 microseconds. However as the air requirement of the engine increases, the amount of pulses increases (frequency of pulses). At idle the frequency is approximately 2477Hz which equates to 5 grams per second (air mass). With the key on but engine not running the output frequency is approximately 260 - 300 Hz. Injectronics have found, due to the nature of this waveform some Multimeters and Oscilloscopes (even high quality name brands) have problems interpreting this waveform. This may result in incorrectly condemning a MAF. The pulse time is always approximately 50 microseconds, but with the key on and engine off the duty cycle is under 2%. Because of this, some multimeters and oscilloscopes will display zero hertz. When using a data scan tool such as Tech 1, the MAF frequency will be displayed at idle but read zero when the engine is stopped.

If you are unsure whether your multimeter or oscilloscope is capable of measuring this, Injectronics suggests trying it on a known good unit first. Note: There are 3 terminals which are marked + (12v power), - (engine earth) and F for Frequency output.

Key on engine off (271 Hz)



Engine idle (2471 Hz)