

Carburation and Ignition Management System (CIMS)

The Omnitek Carburation and Ignition Management System (CIMS) was specifically designed for natural gas (CNG) or propane (LPG) applications and features an integrated ignition and carburetion controller to manage the gas metering and ignition timing for lowest fuel consumption and emissions.

All components have been optimized to work together and provide a reliable, robust system that is easily integrated into retrofit and OEM applications. All in compact and waterproof enclosure to withstand even the harshest tropical environments.

This offers a much lower cost option to electronic fuel injection.

The CIMS features enhanced closed-loop fuel control for lowest emissions and fuel consumption, a high-speed stepper motor driver for fast and accurate mixture control and a powerful ignition system for easy starting and a no-backfire guaranty, as well as a dashboard-switch selectable 2nd ignition map for low grade fuel applications. Latest inductive ignition technology provides long-duration multi-spark capability for multi coil and coil-per-plug applications.

Powerful, compact and reliable. Designed to control normally aspirated or turbo-charged engines. Perfect for use on Diesel-to-CNG engine conversions.

Kit Includes:	
CIMS Controller	Inductive Sensor
Ignition Coils	MAP Sensor (or TPS)
Stepper Motor	Oxygen Sensor
Wiring Harness	Coolant Temperature Sensor
Timing Disk	Manual
Options Include:	MIL Lamp, Selector Switch

All components have been carefully designed to work together.
 No components should be substituted.





	Main Features Are:
*	Powerful Windows Based Calibration Program.
*	Integrated Ignition and Fuel Controller for Engines with 4, 6 or 8 cylinders (individual ignition coils).
*	Multi Spark capable for easy starting.
*	Ignition Timing: Full 3-D mapping – Load, RPM and Fuel Quality.
*	Timing Maps: Two distinct maps. Selectable from drivers seat (gas quality selector switch).
*	Ignition Outputs: <ul style="list-style-type: none"> • Up to 8 IGBT coil drivers, designed to work with Omnitek ignition coils, • or up to 8 circuits for “driver-in-coil” ignition systems.
*	Inputs: <ul style="list-style-type: none"> • TPS or MAP sensor for load mapping • RPM / Camshaft Sensor • Global ignition retard / fuel switch
*	High-speed Closed-loop Control (Stepper Motor) for CNG or LPG engines.
*	Enhanced Oxygen Sensor Control Strategy (Lambda biasing for better emissions).
*	3-D engine speed and load mapping strategy allows for idle band closed loop blocking if desired.
*	Smart diagnostics for fulltime ignition and fuel system metering and action response logic.
*	12-Volt or 24-Volt functionality – automatically senses vehicle voltage and adapts. <ol style="list-style-type: none"> a. Eliminates need for unreliable 24-12 V converter b. PWM strategy for use with 12 V or 24 V gas shut-off solenoids (up to 2) c. PWM strategy for use with 12V O2 sensor heater d. 12 V or 24 V MIL-lamp
*	Dual independent Gas Shut-off Valve drivers allows sequenced opening for more reliable operation and reduced valve wear from pressure wave shock on regulator.
*	EEPROM-based non-volatile block learn capability continuously trims fuel mixture adjustment. Memory is not lost if battery is disconnected.
*	Block-learn provides better starting, transients, fuel consumption and emissions compliance.
*	Optimized gas-trim stepper motor speed guaranties best transient response.
*	Stepper motor logic is reversible (allows use with air bleed, or fuel restriction based systems).
*	No DIP switches or trim-pots. All adjustments are made with a PC or field tool.
*	All surface mount components.
*	Four-layer board provides enhanced resistance to EMI and RFI.
*	All connectors are sealed for environmental protection in wet areas.
*	Statistics recorded on-chip facilitates technician and warranty diagnosis.
*	Software calibratable “fuel prime” feature for faster and more reliable starting.
*	Vehicle overspeed control (“soft” gas shutdown).
*	Engine rev limit control (“soft” gas shutdown).
*	On-board Diagnostics Lamp helps to identify malfunctions.
*	Fuel pressure channel allows fuel-trim block if fuel tanks are almost empty.
*	Environmental: -40°C to +125°C. Water sealed and Engine-compartment compatible.
*	Field-tool to assist with diagnostics.
*	Tachometer Output.
*	Connector: Packard Micro-Pack 36 way.
*	Communications: RS232.