

GM LS3 Throttle Body and ECU Kit

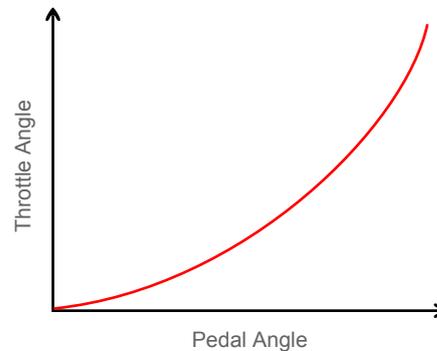
An easy to install kit to convert the GM LS3 engine to a cable operated throttle and pre-mapped user programmable ECU suitable for both IVA / MOT emissions compliant vehicles and race cars.

Kit Contents

- Throttle Body
- Throttle Position Sensor
- Air Temperature Sensor
- Idle Air Bypass Valve (Road Kit Only)
- Lambda Sensors (Road Kit Only)
- Ready Mapped 710 Series ECU
- Ready Built Wiring Harness



Throttle Body



The LS3 engine produces so much torque at small throttle openings that a conventional linear opening throttle plate as offered by many manufacturers makes the engine very difficult to drive at low road speeds. When trying to drive gently with a conventional throttle plate it is very easy to start 'kangarooing' which is both uncomfortable and potentially damaging to your transmission. To counter this problem, this throttle body was developed to open the throttle more slowly at low throttle openings making the engine torque far easier to control. The opening characteristics were tested on both standard and modified engines to ensure suitability regardless of your engine's power output.



Throttle Position Sensor



The pre-fitted throttle position sensor is the very latest technology contactless type sensor and is fully sealed to IP69K standards to ensure accurate and consistent reading even in the most extreme environments.

Air Temperature Sensor



The air temperature sensor is mounted near the incoming air to help with air density calculations.

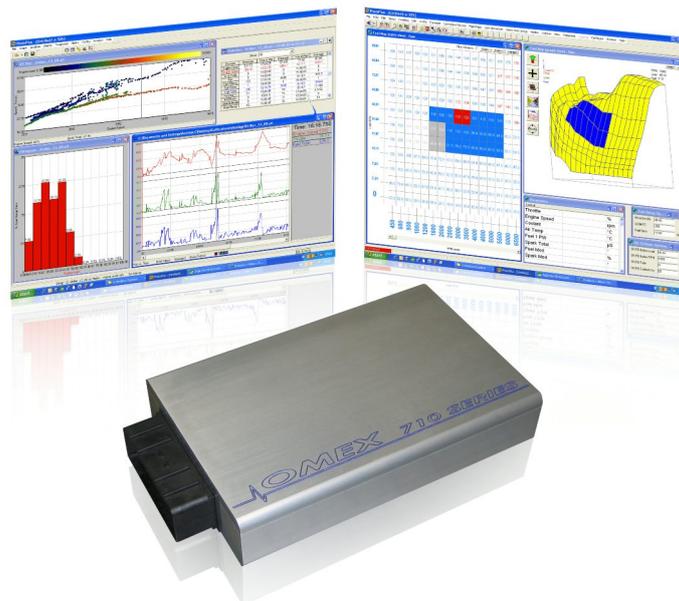
Idle Motor (Road Kit Only)



When a large electrical load is placed on an engine from radiator fans, headlights etc, the engine's idle speed would naturally dip. The Idle Air Bypass Valve included in this kit allows the ECU to control the airflow into the engine at idle through this valve and so maintain a constant engine speed regardless of loadings on the engine. When an engine is cold it naturally idles at a lower speed. The valve controls the engine to go to a high idle speed when cold. The end result is a mappable aftermarket system with the quality idle controls of a current production road car. The valve simply pipes to the throttle body so allowing for remote mounting.

Pure race cars that will have low electrical loadings and the engine warmed before the vehicle is driven do not require this control, and so for the race kit, these parts are not included.

Engine Management



Omex's top ECU, the 710 controls the fuel injection, standard ignition coils, and optionally, many other functions around the vehicle. The ECU is suitable for both N/A and boosted engines and is fully configurable by the user with our free Windows based MAP3000 software package. The ECU is suited to all applications featuring advanced road car controls such as internal compensation for barometric air pressure for vehicles used at varying altitudes, and advanced race car controls such as launch control and internal datalogging.

Ready Built Wiring Harness



The harness supplied in the kit is an OEM specification harness, fully built complete with all engine connectors ready to simply clip on to the engine. Upgrades to other build specifications are available.

Will the engine pass emissions tests?



The Road kit is supplied with lambda sensors which give the ECU information on the exhaust emissions, allowing it to constantly trim the fuelling to optimum. When suitable catalytic converters are used, a standard engine with this kit will pass UK IVA and MOT emissions tests with ease. These lambda sensors fit the bosses in the standard GM exhaust manifold, if your exhaust does not have lambda sensor bosses in it, these are available from Omex to weld into your exhaust. The lambda sensors are not included in the race kit.

Will the engine need setting up?

The kit can be supplied with a calibration for a standard engine with this kit, and for the popular Edelbrock E-Force supercharger kit. Modified engines will require mapping on an engine dyno or rolling road. On request, Omex will supply the most suitable calibration we have to your engine modifications to give you a good starting point.

What else will I need?

Fuel Pressure Regulator - If using a standard engine with this kit, for the ECU setup to be correct it must be used with the correct fuel pressure and so Omex can supply a regulator to maintain fuel pressure correct for the kit. If you have a modified engine then you will be having the ECU set up on a dyno and so any suitable fuel pressure regulator can be used as the setup will be done to match your regulator.

MAP sensor - Boosted engines require a MAP sensor to give the ECU a reading of boost pressure. The TMAP sensor supplied in the Edelbrock E-Force supercharger kit can be used, as can sensors supplied by Omex. This is not required for N/A engines.



Fuel Pressure Regulator



MAP Sensor

Optional Extras / Functions

With optional extra parts the Omex 710 ECU is capable of much more than simply running the engine;

Shift lights - a visual warning for the optimum rpm gearshift. Normally a high intensity 10mm red LED is used, but other sizes and colours are available on request.

Full throttle gearshift - gearshifts without lifting off the throttle. In the case of sequential gearboxes, even without using the clutch. Sequential gearboxes often have a switch inbuilt for input to the ECU, and those using a 'normal' gearbox can use an Omex clutch switch, signalling an ignition retard that temporarily reduces engine power output.

Launch control - consistent fast starts. A button on the steering wheel that gives a temporary lower rev limit holding the engine steady on the startline.

Radiator fan control - reduce the number of sensors, joins in the cooling system, and have full programmability of the ON / OFF temperatures for the radiator fan. An additional relay is required for this control.

Fuel Pump Control - the ECU can control a fuel pump relay to turn ON / OFF the fuel pump. An additional relay is required for this control.

Harness upgrade 1 - upgrade to a heatshrunk, race specification harness. The same dimension harness as supplied in the kit, but sleeved in heatshrink for improved reliability in extreme conditions.

Harness upgrade 2 - upgrade to the bespoke 'Race' specification is built using the same materials and methods as the standard 'Race' specification harness, but with lengths tailored to suit your engine bay.



Shift light (10mm LED)



Full throttle gearshift
(clutch switch)



Launch control (button)



Radiator fan control
(Relay and base)



Fuel pump control
(Relay and base)



Harness Upgrades



Why choose Omex Products?

The difference between winning and losing is very small. In hillclimbing and sprinting it can regularly be 0.05 secs, in circuit racing a half cars length, in rallying one corner.....

So what makes Omex products win so many events and championships? Simple, attention to DETAIL.

The very basics of how the ECU works makes a big difference. How it calculates when an ignition spark is going to be placed, when it's calculated, how engine acceleration is taken into account, and so ultimately how accurately that spark is placed, are things that you do not think about when looking at ECUs. Here at Omex we do because those details that are often taken for granted are the difference between one ECU system and another, the difference between winning and losing... The detailed approach to design of the basics by our team of top software and hardware design engineers, responsible for race wins throughout all forms of motorsport at the very highest levels, means you do not need to think about these details because we do. Features lists don't win races; it's how these features work that wins races. Other ECUs may have similar features lists, but how an Omex works makes all the difference. Naturally, Omex ECUs have all of the features you would expect from a top level ECU.

Winning Championships is a combination of performance and reliability. Reliability is found in the details of the way the ECU is designed and built. All Omex ECUs are robot assembled in the UK on an ISO9001:2000 approved assembly line, ensuring a consistent, high quality build. They are all then thoroughly tested, twice, before leaving Omex. A well running system is a combination of ECU and many other components. It is important that all components in the system continue to work in order for the ECU to be able to perform, and so Omex source all other components such as sensors and injectors only from highly respected manufacturers.

Of course, before you can even think about winning races and championships, you need to get to the race! Omex employ only the best engineers to ensure that whenever you contact us you get only the very best advice, right from specification of the best parts for your application, through to advice during installation, and finally, getting your engine running to its maximum potential.

And should something go wrong at any time during your ownership of your Omex ECU, the same team of technicians is available just a telephone call or mouse click away with free advice to help you through.

All these details have helped countless others win races and championships. Maybe you will be next...

Price List

Kit	Part Number	Retail	Inc VAT
Race Kit	- OMTBKIT010201	- £1505.00	- £1806.00
Road Kit	- OMTBKIT010202	- £1705.00	- £2046.00

Options and Upgrades

Lambda sensor boss	- OMEM2351 (qty2)	- £20.80	- £24.96
Fuel pressure regulator (10mm push on fittings)	- FPR535M10	- £77.00	- £92.40
MAP sensor 2.5 bar (up to 1.5 bar of boost)	- OMEM2104	- £80.00	- £96.00
Shift light (10mm LED - red) - inc mounting bezel and cables	- OMEM6003	- £7.80	- £9.36
Shift light (5mm LED - red) - inc mounting bezel and cables	- OMEM6004	- £7.80	- £9.36
Full throttle gearshift clutch switch - inc cables	- OMEM6010	- £6.50	- £7.80
Launch control button - inc cables	- OMEM6011	- £10.00	- £12.00
Radiator fan control relay and base	- OMEM5010	- £25.00	- £30.00
Fuel pump control relay and base	- OMEM5010	- £25.00	- £30.00
Harness upgrade 1	-	- £320.00	- £384.00
Harness upgrade 2	-	- £420.00	- £504.00

Optional parts are standalone extra parts and can be added to your kit at any time. Upgrade parts, designated by a '(U)' in the part number, are upgrading parts in the kit and so are only available at the above prices at the time of kit purchase. They are available at any time, but at the full price of the part.

All information provided is, to the best of Omex's knowledge, correct at time of print. Due to differences in individual engines, differences in specification from original manufacturer that we may be unaware of, and differences in individual installations such as different exhaust designs, any claims of power or emissions cannot be guaranteed.

E&OE. VAT@20.0%