

ECU Physical Features

Inputs

Crank Magnetic	+/- 0.5 Volt -> +/- 120 Volt	Oil Temperature (Scalable)	around 2.5K Ohm at 20 C
Crank Hall	NPN open collector o/p	Gear Potentiometer	up to 10 KOhm
Cam Magnetic	+/- 0.5 Volt -> +/- 120 Volt	(Shared analogue 3)	
Cam Hall	NPN open collector o/p	Three flexible analogues	0 5 Volt
Throttle Position	up to 10 KOhm	One Wheel Speed	NPN open collector o/p
Manifold or Barometric Pressure	0 5Volt	Launch Button	Switch
Water Temperature (Scalable)	around 2.5K Ohm at 20 C	Shift Cut	Switch
Air Temperature (Scalable)	around 2.5K Ohm at 20 C	Map 2 / Lambda Switch	Switch
Lambda	0 5 Volt	Logging Switch	Switch
Oil Pressure	0 5V or VDO style + pull up	(Shared analogue 2)	
Fuel Pressure	0 5V or VDO style + pull up		

Outputs

Four Coil Drivers	9 amp	Turbo Pressure Valve Driver	1 amp
Four Injector Drivers	4 amp	Cam Control Valve Driver	1 amp (Shared Aux 1)
Fuel Pump Relay Driver	1 amp	Fan Relay Driver	1 amp (Shared Aux 2)
Tacho signal	250 milli amp	Aux 1	1 amp
Shift Light Driver	1 amp	Aux 2	1 amp
Idle Valve Driver	1 amp	Aux 3	4 amp
Als Valve Driver	4 amp		

Protection

The S60 is fully protected against reverse battery.
Connection of input pins to 12 Volts.
24 volts for 30 seconds.
Water ingress to IP69 (international standard, very waterproof).
Outputs are self protected against over current.
Strong Aluminum Extruded and CNC machined case.

Compliance

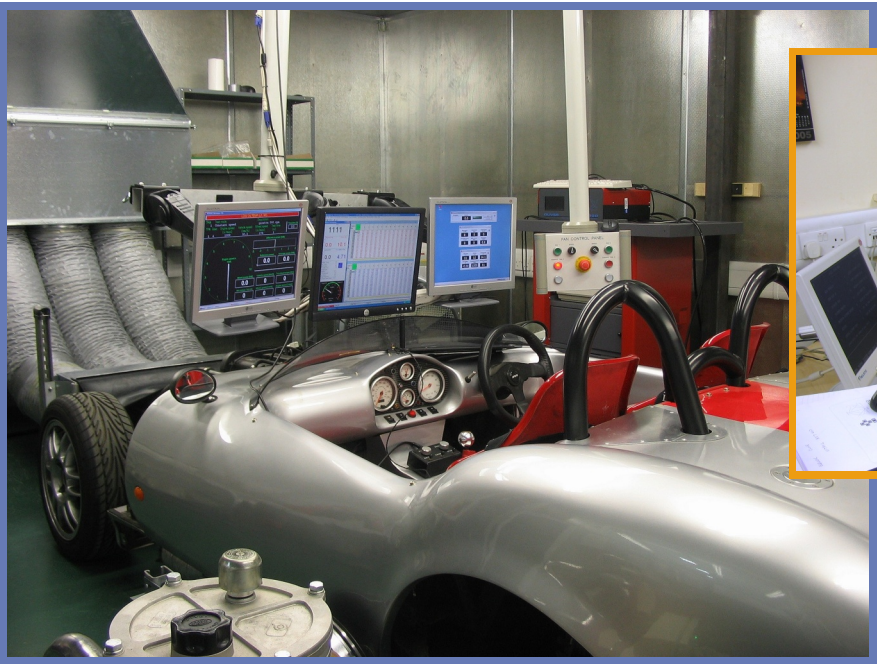
The S60 is fully compliant to EU “CE” marking.
The S60 will be tested for EU “e” marking.

Connections

Two 19 pin AMP Superseal connectors.
One DB15 data connection to waterproof to Ip69.

Dimensions

Size 133 x 134 x 44 mm
Weight “subject to change”



The S60 PRO under development on one of DTA's own test vehicles



DTA's custom designed software development suite



The DTA in-house testing facility

For further details, please contact us or visit the DTA website

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To meet the demands of a new generation of high revving race engines, the S60 PRO, the very latest ECU from DTA, has been designed from first principles in both hardware and software

S60 PRO



Engine management in the digital age.

Designed to meet the demands of the latest generation of very high revving, four coil, sequentially injected engines, the **S60 PRO** is the latest ECU from DTA.



S60 PRO

Incorporating advanced features such as closed loop camshaft control, dual maps, idle control, an auto -mapping capability and full protection against all electrical and environmental mishaps, S60 is the ideal unit for harsh conditions such as grass track, off road, rally raid, bike and boat use

ECU Functions

Engine Configuration

Flexible and easily adapted to different OEM, crank, cam sensor arrangements.
Genuine four and two stroke support.
Twin spark engines.
Twin injector engines.
Sequential or grouped injection.
Individual coils, wasted spark or distributor.
Unequal coil firing capability.
Unequal injection angle capability.
Delayed sequential injection.
User controlled fan activation.
Sensors can be calibrated individually with a lot of preset options supplied.
Flexible Tacho Output

Main Fuel Ignition Functions

Two main fuel, spark and turbo maps selected by a dashboard switch.
Comprehensive start up fuelling options both time and temperature dependant.
Air, coolant and manifold pressure compensation maps.
Throttle transient increase compensation.
Throttle transient reduction compensation.
RPM and load breakpoints can be calibrated by the user.
Throttle or MAP as load.
All maps with one or two dimensional with interpolation as required.

Lambda control functions

Extensive lambda parameters table to ensure stable closed loop operation and emissions requirements can be met where needed.
Full three dimensional lambda target map.
Auto-tuning function.

Turbo Control Functions

Open or closed loop turbo pressure control via PWM valve.
Modify target turbo pressure by gear selected.
Modify target turbo pressure by vehicle speed.
Two control maps selected by switch on dashboard.
Active base PWM map for easy calibration.

Idle Control Functions

Open or closed loop idle speed control via PWM valve.
Closed loop idle target speed temperature dependant.
Active base PWM map for easy calibration.
Fuel enrichment table calibrated versus PWM percentage.

ALS control functions

Full ALS ignition and fuel maps.
ALS valve control together with map switching controlled by dash board switch.

Cam Control Functions

Open or closed loop cam advance control via PWM valve.
Static offset table to zero out electrical movement effects.
Active Cam Target Advance map, load and speed dependant.
Active base PWM map for easy calibration.

Water injection

When not being used to control the camshaft, cam base PWM map can be used instead for water injection, giving complete load and speed dependence.

Flexible Input/Output

Three uncommitted input tables which use 0 5 volt inputs or any input the S60 knows already, linked to fuel and advance modifiers and a PWM output.

Launch Control

Fully flexible first gear launch capability.
Extensively tunable to individual vehicles.

Full Throttle Gear Shift Cut

Shift cut capability with 1ms resolution, variable for each gear with full switch de-bounce capability.

Voltage Compensation Tables

User configurable voltage compensation tables for injector dead time and coil on time (dwell time).

Data logging

Up to thirty six separate items can be logged.
Three user selectable logging frequencies.
Up to nine hours logging capability.
Graphing can be done on-line to the ECU.

Firmware

The ECU firmware is flash upgradeable via the serial port with a special cable and software.
Current firmware and software published on www.dtafast.co.uk.

Diagnostics and test features.

Full sensor diagnostics and fault recording.
Extensive engine run time recording at different load and speed conditions.
Ability to exercise injectors and coils without engine running for fault finding.

CAN PC Communications.

The ECU can communicate with the PC via our USB -> CAN converter. This solves the problem of unreliable USB -> RS232 converters.

*Aimed primarily at the advanced four cylinder market, the **S60 PRO** also caters for wasted spark non-sequentially injected engines of up to eight cylinders.*

S60 PRO

Performance: exceptional
Reliability: absolute
Features: comprehensive
Software: approachable and intuitive in the DTA tradition

