COSWORTH

MQ12DI ENGINE CONTROL UNIT

Cosworth's MQ12Di ECU provides cutting-edge engine control for GDI and PFI applications combined with fast-rate data logging in a compact single-box solution. Currently used in top-tier motorsport, the MQ12Di is capable of working with almost any combination of coil, injector, OEM sensor and actuator.

COMPATIBILITY

An extensive number of engine configurations are supported with multiple pulse GDI fuelling up to 8 cylinders (16,000 RPM), fully sequential PFI fuelling up to 12 cylinders (22,000 RPM) or combined GDI and PFI fuelling up to 8 cylinders.

Synchronisation of crank and camshaft signals during slow, uneven cranking conditions is ensured with a crank and camshaft pattern recognition system (compatible with most OEM timing wheels).

Send and receive large quantities of data to and from other devices with up to 4 CAN ports.

I/O & PIN FUNCTIONALITY

Complex instrumentations of engine sensors and auxiliaries are supported with 16 digital inputs, 37 analogue inputs and 35 digital outputs.

Minimise the number of vacant/unused pins with multi-function pins. Unused digital inputs can be used as analogues and unused injector drivers as PWM outputs.

Stepper, DC and FBW motor support with 3 full-bridges (also configurable as 6 half-bridges) alternatively used as PWM outputs.

DATA LOGGING

Integrated Omega L2 logger hardware provides uncompromised, fast-rate data logging featuring onbox maths channel capability for more advanced control requirements.

Large volumes of data can be logged with up to 2GB memory, downloaded quickly via Ethernet.

SOFTWARE

Precision engine calibration, gearshift control and grip management with advanced engine, gearbox and traction strategies (including closed loop knock, dual lambda and VVT for up to 4 camshafts).

Design, simulate and upload custom control strategies with Autocoding, an available software upgrade.

The toolchain utilises industry standard MathWorks® MATLAB® software and is fully integrated with Cosworth's calibration software CalTool.

PHYSICAL & OPERATING

Continuation of engine control and logging in the event of low battery with a voltage operating range of 8V – 18V.

Housed in an Aluminium enclosure, designed and manufactured to IP67 the unit is protected against the infiltration of dust and water immersion up to 1m.

Compact and lightweight with a footprint of 175 x 141 x 43 mm and weight of 1020g.

MQ12DI FEATURE MATRIX

		Plus	Pro	Ultra
	Platform (Omega)	MQ12Di		
	Variant	Plus	Pro	Ultra
	Part Number	01E-501085-Plus	01E-501085-Pro	01E-501085-Ultra
Combustion Control	IGBT Ignition Drivers	8		
	TTL Ignition Drivers	12		
	GDI Injector Drivers	8		
	Peak and Hold Injector Drivers	16		
I/O	Analogue Inputs	37		
	Digital Inputs	16		
	Digital Outputs	7		
	Auxilary Outputs	6		
Logging	Capacity (MB)	128	512	1,024
	Bandwidth (bytes/sec)	25,000	35,000	50,000
	Sampling Rates (Hz)	4		
Maths	User Configurable Maths	50	100	250
Comms	CAN Ports	4		
Physical	Weight (g)	1,020		
	Dimensions (mm)	175 x 141 x 43		

Get in touch