

COSWORTH

Engine Control Units

Antares 8

QUICK LINKS

- [Overview](#)
- [Specifications](#)
- [Dimensions](#)
- [I/O Wiring](#)
- [Recycling and Environmental Protection](#)

Antares 8

Overview

The Antares 8 is Cosworth's latest generation high-performance control and logging system. It features two microprocessors, one dedicated to control and the other for data collection and data logging.

It features eight configurable GDI injector drivers and sixteen configurable injector/PWM drivers, combined with eight IGBT ignition outputs and twelve logic level coil driving outputs make it capable of controlling multiple-pulse GDI fueling on engines up to eight cylinders or fully sequential port injection fueling on engines up to twelve cylinders and 24 Injectors. Combined GDI and PFI fueling is supported for engines up to eight cylinders.

Dual Fly-by-wire capability is also included along with provision for Stepper and DC motors. The Antares 8 crank and camshaft pattern recognition system allows the ECU to be used with virtually any OEM timing wheel. This sophisticated pattern recognition algorithm also facilitates synchronization during slow and uneven cranking conditions.

The Antares 8 provides multiple functions for many of its pins:

- Unused injector and IGBT ignition outputs can be used as digital outputs
- Unused digital inputs can be used as 12 bit analogue inputs
- H-bridge outputs can be used in either full or half bridge mode
- H-bridge outputs can be combined to drive a stepper motor or used to provide additional high or low-side drive capability.

All these features are configurable in software. For reliability the Antares 8 includes reverse-battery, over-voltage and load dump protection built in as standard. Sensor supply and signal ground pins are also protected against shorts to battery positive and negative.

Advanced software features include:

- cylinder pressure monitoring
- closed loop knock control
- traction control
- launch control



The Antares 8 is designed to function up to a maximum RPM of 16,000rpm when running GDI, or 22,000rpm when running with port fueling only. There are four lambda sensor inputs, which will accept NTK/Bosch style wideband sensors. There are also eight specialized knock inputs with a software enabled gain stage.

The wide range of functionality makes the Antares 8 capable of working with almost any combination of coil, injector, OEM sensor and actuator to deliver optimal engine performance.

- Integrated gearshift strategies
- variable valve timing of up to 4 camshafts (including BMW VANOS)
- high speed data logging
- scrutineering modes for single make series

Antares 8

Specifications

Electrical Data	
Supply Voltage	6.0V-16.5V Reverse battery, over-voltage and load dump protection (see Notes below, more information?)
Ethernet	1x 1000MB/s PC Setup 2 x 100MB/s Ethernet Expansion 1x 100MB/s EtherCat
Serial Debug Port	1x Bi-directional RS232 Fixed at 115200 BAUD Logger µP
Serial Ports	1x Bi-directional RS232 Split Tx and Rx BAUD rates Logger side Max BAUD rate: 115200 1x Bi-directional RS232 control side Max BAUD rate: 115200
Status LEDs	7x LEDs

Mechanical Data	
Material	6082-T6 Anodised Aluminium
Dimensions	189 X 40 X 157MM
Weight	1100g
Connecters	Deutsch Autosports
Temperature Rat-	Operating -20 to +70°C Storage -30 to +80°C
IP Rating	IP67

Ordering Information

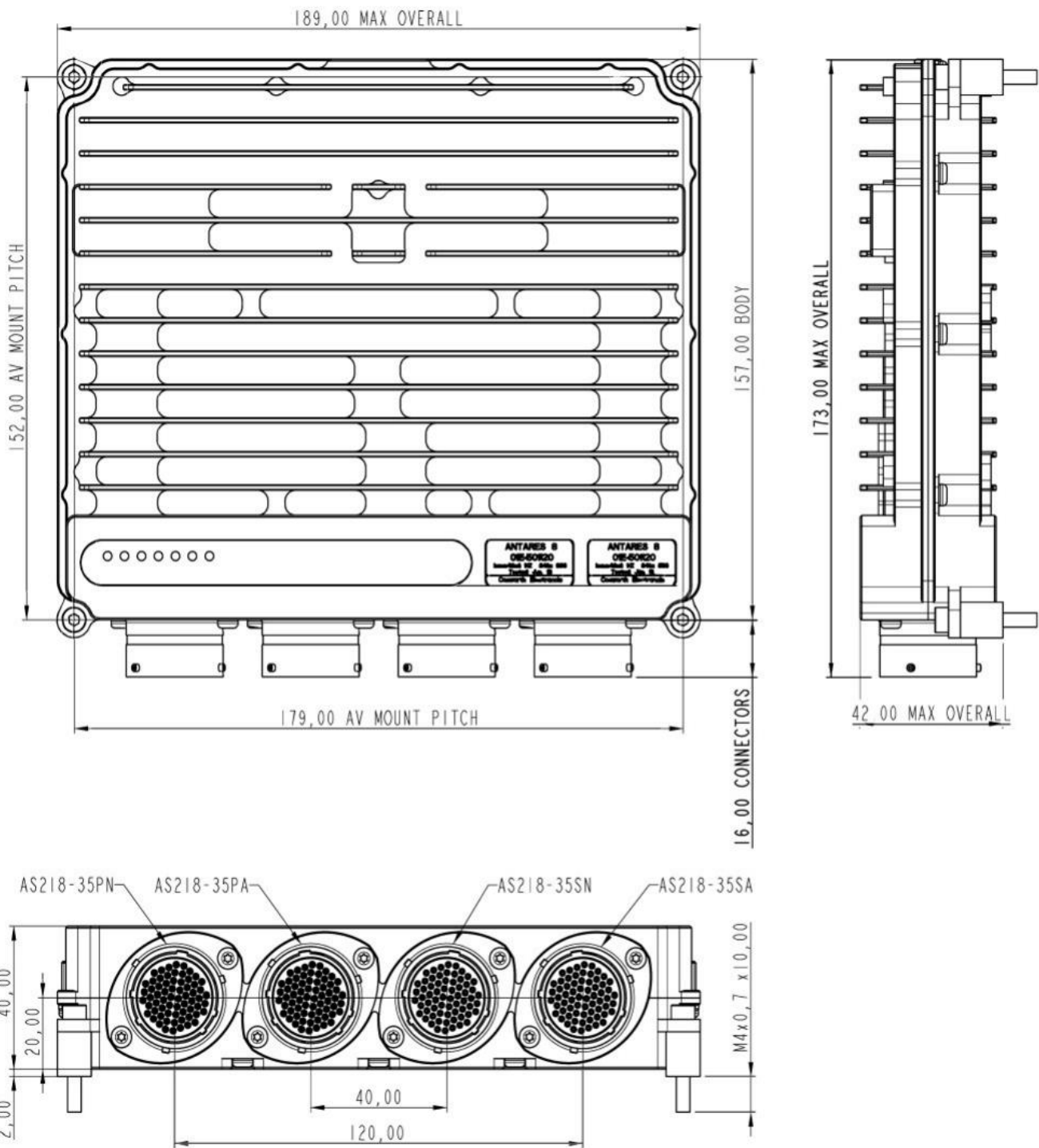
Part Number	
01E-501120	Antares 8 Series
60E-501130	Antares 8 Comms Loom (C1 only)
60E-501130	Antares 8 Bench loom
TBD	Universal Transport Case
Deutsch AS6-18-35SN	C1 mating connector
Deutsch AS6-18-35SA	C2 mating connector
Deutsch AS6-18-35PN	C3 mating connector
Deutsch AS6-18-35PA	C4 mating connector

Technical Data	
Engine configuration	1 to 8 Cylinders (GDI) 1 to 12 Cylinders (PFI) 4 stroke, 2 stroke or rotary Natural or forced induction
Digital outputs	12x logic level driven (TTL) 16x Peak-Hold (all support PWM)
Digital inputs	16x
Data logging	Up to 12GB memory Continuous Logger: 1kHz logging rate 100k samples/s bandwidth Burst logger: 200kHz ² logging rate TBD
Crank and cam sensors	Dual crank input, Single dedicated cam input, 4x general purpose VCAM Hall effect or inductive
GDI Injector drivers	8 x GDI outputs with boosted voltage
PFI Injector / PWM drivers	Please refer to page 18
Thermocouple inputs	4x Type K (12-bit)
Analogue inputs	32x (12bit)
Analogue inputs (high speed)	8x (12bit)
Auxiliary outputs	4 x full bridge (10A peak) 1 x full bridge (5A peak) 2 x stepper motor alternate Function ¹
Ignition drivers	8 x IGBT internal clamp (+430V, 20A) 12 x logic level driven (TTL)
Internal Monitoring	Battery voltage Box temperature Excitation voltages Injector current Ignition current H-Bridge Current H-Bridge Temp

¹ subject to applied Token

Antares 8

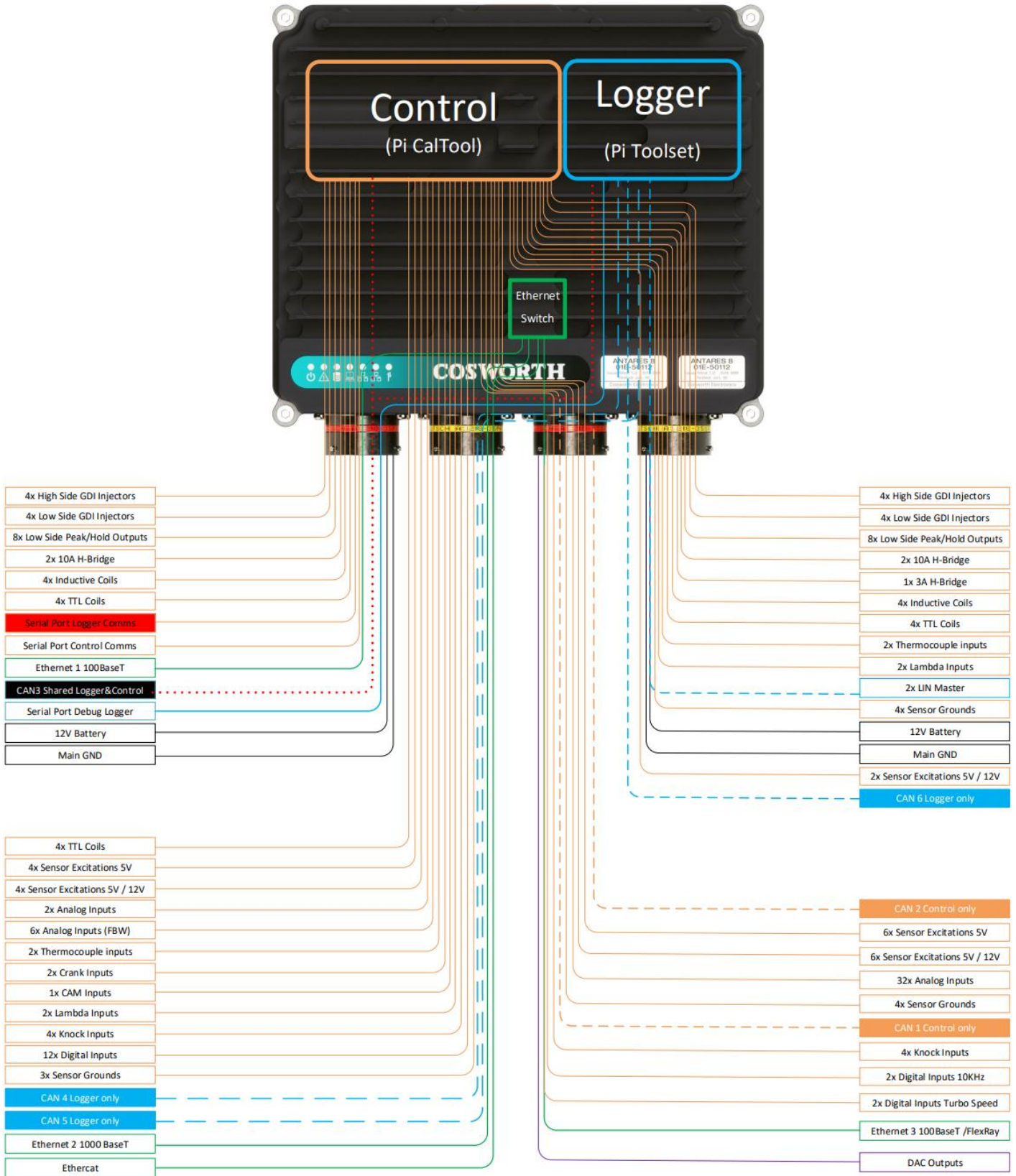
Dimensions



All dimensions shown in mm

Antares 8

Input / Output Connector Allocation



Recycling and Environmental Protection

Cosworth Electronics is committed to conducting its business in an environmentally responsible manner and strive for high environmental standards.

Manufacture

Cosworth products comply with the appropriate requirements of the Restriction of Hazardous Substance (RoHS)

Disposal

Electronic equipment should be disposed of on accordance with the regulations in force and in particular on accordance with the Waste in Electrical and Electronic Equipment directive. (WEEE).

Battery

This equipment contains a rechargeable battery (Manganese Silicon Lithium).

The equipment may be returned to Cosworth Electronics for a replacement battery. A charge will be made for this service.

To remove the battery for recycling:

- Remove the case(s).
- Remove printed circuit boards from the case.
- Remove the battery from the printed circuit board.
- Dispose of the battery in accordance with the regulations in force.

Removal of the battery will result in the warranty of the unit being void.



T (UK) +44 (0) 1954 235 600 | **T (US)** +1 (317) 644 1037
E sales@cosworth.com | www.cosworth.com

© Copyright Cosworth Electronics Ltd | All Content is
Proprietary and Confidential. Brookfield Technology Centre,
Twentyence Road, Cottenham, Cambridge, CB24 8PS.