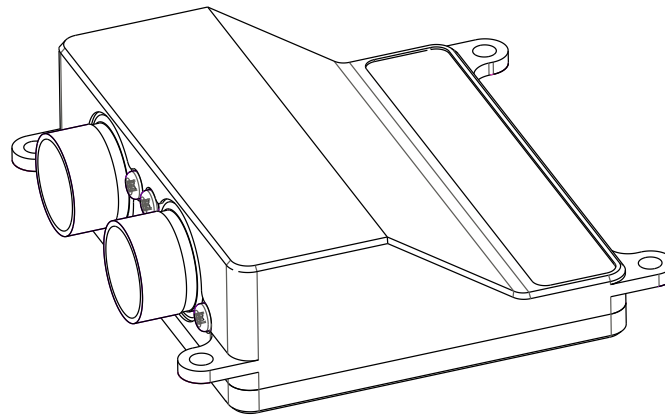


Omega L2 Logger



Introduction

Omega L2 is a high performance and scalable data logger platform designed for use in applications where compact, rugged, lightweight data acquisition equipment is required.

Omega L2 can log 250 channels at rates up to 1KHz, with data coming from connected analogue or digital sensors or via CAN and Serial buses. In addition Omega L2 has the capability to run on-board math channels providing further channels of information and calculations in real time, for example Qualifying Mode.

Omega L2 easily interfaces to Engine Control Units via customisable CAN or serial ports and is also capable of communicating to external devices including a dash displays or another data loggers.

Data storage of up to 1GB is offloaded via fast Ethernet using Pi Toolset, an easy to use PC software configuration tool, and then analysed using Pi Toolbox, Cosworth's class leading data analysis software.

Features

The Omega L2 Logger provides the following key features

Memory:	128MB for data logging
Digital Inputs:	6 off standard (Applications: 1 x Lap Beacon, 2 x wheel speed)
Analogue Inputs:	16 off. 0 to 5V, 12 bit resolution. (Typical applications: Temperature, Position, Pressure ...)
Data logging	Up to 250 channels at sample rates of up to 1000Hz.
Communications:	2 x CAN, 3 x RS232, 1 x Ethernet (100 MB/s)
Accelerometers:	On board two axis accelerometer.

Configuration

The Omega L2 is supplied with a default configuration for “out of the box” operation but can be configured for a particular application and sensor source before use. For further information please consult the Quick Start Guide.

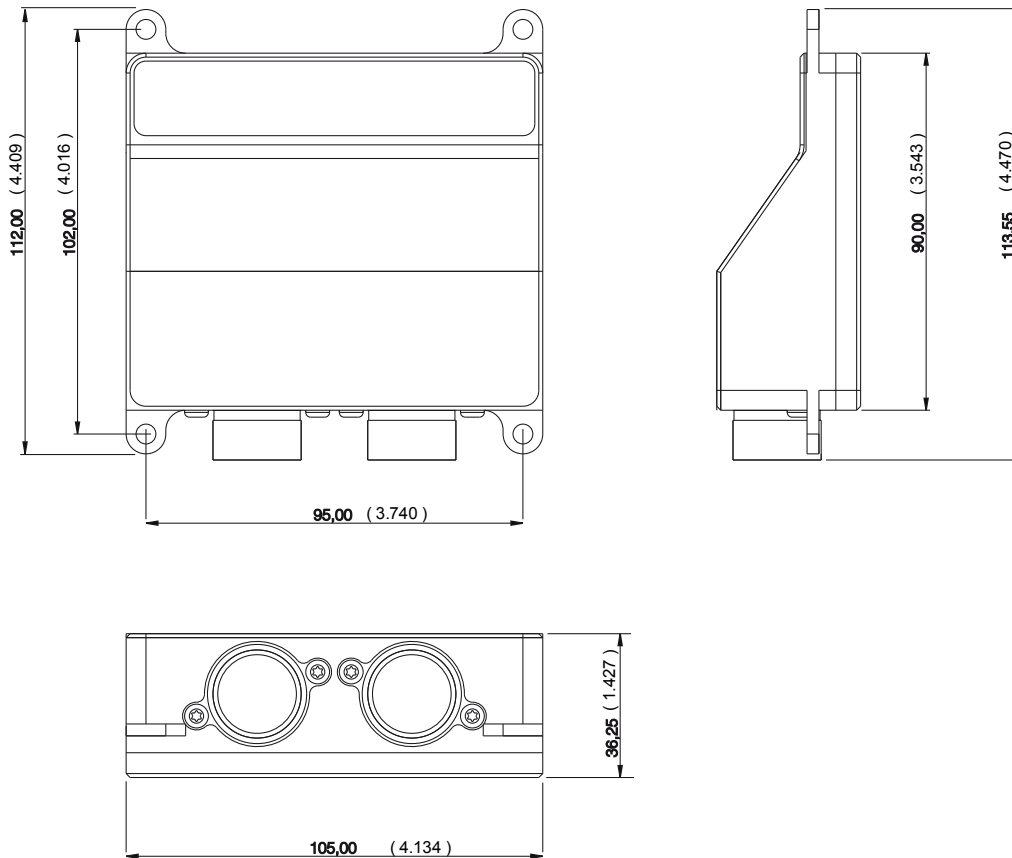
Installation

When fitting the Omega L2, anti vibration (AV) mounts should be used.

When choosing a location for the logger:

- Allow space for cables and connectors.
- The Omega L2 Logger must be electrically and mechanically isolated from the vehicle chassis.
- Make sure that the logger will not be affected by heat soak.
- Make sure that air can flow over the logger to keep it below 60°C.
- Mount with the label up and connectors to the left. (This is to match the Pi Toolset channel naming conventions.)

Dimensions



Dimensions in millimetres (inches)

Specifications

Description	Value
Power requirement	+7.5V to +28V
Logging memory	128MB
Operational temperature	+10°C to +60°C
Storage temperature	-20°C to +70°C
Weight	269 grams
EMC	See Declaration of Conformity
Vibration	DV-V(a), DV-V(c)
Environmental	IP65
	RoHS compliant

Ordering Information

Description	Part number
Omega L2-PRO	01L-301000-PRO

Connector information

Main connector

(Autosport- Yellow collar)

Connector	Mating connector
AS214-35PA	AS614-35SA

Pin	Description	Notes
1.	Battery -ve	Fused 2 Amp
2.	Battery +ve (+12V or +28V)	
3.	CAN1 High	
4.	Serial 1 Rx	Serial RS232 Rx
5.	Sensor GND	
6.	Sensor Power 4 +12V	+12V±0.5V@0.5Amp shared on 3 pins
7.	Sensor Power 4 +12V	+12V±0.5V@0.5Amp shared on 3 pins
8.	Sensor GND	
9.	Sensor Power 1 +5V	+5V@100mA shared on 4 pins
10.	Sensor Power 1 +5V	+5V@100mA shared on 4 pins
11.	Sensor Power 4 +12V	+12V±0.5V@0.5Amp shared on 3 pins
12.	Sensor GND	
13.	Sensor GND	
14.	Sensor Power 1 +5V	+5V@100mA shared on 4 pins
15.	Sensor Power 2 +5 or +12V	Software selectable +5V/12V@100mA, not shared with other pins
16.	Sensor Power 3 +5 or +12V	Software selectable +5V/12V@100mA, not shared with other pins
17.	Sensor Power 1 +5V	+5V@100mA shared on 4 pins
18.	Sensor GND	
19.	CAN2 High	
20.	CAN1 Low	
21.	Serial 3 Tx	Serial RS232 Tx
22.	Digital 2 signal	RPM input
23.	Digital 3 signal	Beacon input
24.	Analogue 1 signal (0-5V)	Software selectable 330R pull-down resistor
25.	Analogue 2 signal (0-5V)	Software selectable 330R pull-down resistor
26.	Digital 1 signal	
27.	Analogue 5 signal (0-5V)	
28.	Analogue 3 signal (0-5V)	Software selectable 10k pull-down resistor
29.	Analogue 4 signal (0-5V)	Software selectable 10k pull-down resistor
30.	Analogue 6 signal (0-5V)	
31.	CAN2 Low	
32.	100BaseT – RX-	
33.	100BaseT – Rx+	
34.	Serial 2 Rx	Serial RS232 Rx
35.	100BaseT – Tx+	
36.	100BaseT – Tx-	
37.	Serial 1 Tx	Serial RS232 Tx

Expansion connector

(Autosport - Red collar)

Connector	Mating connector
AS214-35PN	AS614-35SN

Pin	Description	Notes
1.	High Power 1 12V/HSD Supply	Maximum 0.7Amps
2.	High Power 2 12V/HSD Supply	Maximum 0.7Amps
3.	Sensor GND	
4.	Sensor GND	
5.	Sensor Power 6 +5V or +12V	Software selectable +5V/12V@100mA, not shared with other pins
6.	Sensor Power 7 +5V or +12V	Software selectable +5V/12V@100mA, not shared with other pins
7.	Sensor GND	
8.	Sensor Power 8 +12V	+12V±0.5V@0.5Amp shared on 3 pins
9.	Sensor Power 5 +5V	+5V@100mA shared on 4 pins
10.	Sensor Power 5 +5V	+5V@100mA shared on 4 pins
11.	Sensor GND	
12.	Sensor Power 8 +12V	+12V±0.5V@0.5Amp shared on 3 pins
13.	Sensor Power 5 +5V	+5V@100mA shared on 4 pins
14.	Sensor GND	
15.	Sensor Power 8 +12V	+12V±0.5V@0.5Amp shared on 3 pins
16.	Sensor Power 5 +5V	+5V@100mA shared on 4 pins
17.	Sensor GND	
18.	Digital 6 signal	
19.	Digital 5 signal	
20.	Digital 4 signal	
21.	Analogue 7 signal (0-5V)	Software selectable 330R pull-down resistor
22.	Analogue 8 signal (0-5V)	Software selectable 330R pull-down resistor
23.	Analogue 13 signal (0-5V)	
24.	Analogue 9 signal (0-5V)	
25.	Analogue 10 signal (0-5V)	
26.	Analogue 11 signal (0-5V)	
27.	Analogue 14 signal (0-5V)	
28.	Analogue 12 signal (0-5V)	
29.	Analogue 15 signal (0-5V)	
30.	Analogue 16 signal (0-5V)	
31.	Serial 5 Tx	Serial RS232 Tx
32.	Serial 4 Rx	Serial RS232 Rx
33.	Sensor GND	
34.	Sensor GND	
35.	Sensor GND	
36.	Serial 0 Rx	Serial Debug RS232 Rx
37.	Serial 0 Tx	Serial Debug RS232 Tx

Recycling and Environmental Protection

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

Manufacture

Cosworth products comply with the appropriate requirements of the Restriction of Hazardous Substances (RoHS) directive (where applicable).

Disposal

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

Battery

This equipment contains a battery. (Lithium Vanadium Pentoxide)

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

Removal of the battery by the user may void any warranty on the equipment.

To remove the battery for recycling:

- Remove the case cover(s).
- Remove the printed circuit boards from the case.
- Remove the battery from the printed circuit board.

Dispose of the battery in accordance with regulations in force.



Declaration of Conformity

We, the undersigned,

Cosworth Electronics
Brookfield Motorsports Centre,
Cottenham,
Cambridgeshire, CB24 8PS
United Kingdom

Certify and declare under our sole responsibility that the following equipment:

Omega Logger L2 – part number 01L-301000-L2
Omega Logger RST – part number 01L-301000-RST

A logger for use only in motorsport applications

Conforms to the following EC directives including applicable amendments:

EMC Directive 89/336/EEC, 72/245/EEC (last amended 2004/104/EC)

The following standards have been applied:

2004/104/EC

Cottenham, 28 August 2009



George Lendrum - Divisional Managing Director