50-350mm Mini Laser Distance Sensor

COSWORTH

Features

- Miniature high precision laser distance sensor
- Specially designed for high ambient light conditions
- 0-5V analogue output for easy use with all data loggers
- IP67 rated for all weathers
- Replaceable protective window for use in harsh environments
- Teachable measurement range for increased resolution

Applications

- Motorsport vehicle ride height measurement

Description

This Mini Laser Ride Height Sensor accurately measures ride height distances from 50mm to 350mm, with a 0.02mm to 0.45mm resolution and a response time <2.5ms. The output from the sensor is a single analogue channel which can be fed to a data logger.

The sensor is supplied with a 1m unterminated flying lead or an Autosport terminated variant.

Drop out suppression

If the laser is interrupted or measuring errors occur, the analogue output will stay on the last valid output value for a maximum time of 200ms. Any valid measurement will immediately update the output. If no valid measurement was made for 200ms, then the output will drop to 0V.

Teaching the sensor new distance settings

The sensor can be taught a specific distance range within the normal operating range. This allows the 0...5V output voltage to work across a smaller measurement range.

To teach the sensor: Connect +12V to the blue wire for 6 seconds. Within 20 seconds, with the sensor at the required new minimum distance, connect 12V momentarily to the blue wire. Move the sensor to the required new maximum distance and repeat.

To reset the sensor: Apply +12V to the blue wire for 20 seconds.

Connector Information

Connector

Connector	Mating connector
ASL606-05PN-HE	ASL106-05SN-HE

Pinout

Pin	Colour	Signal Description
1	Red	+VE Supply
2	White	Signal
3	n/c	Not connected
4	Blue	Teach Calibration
5	Black	GND

Specifications

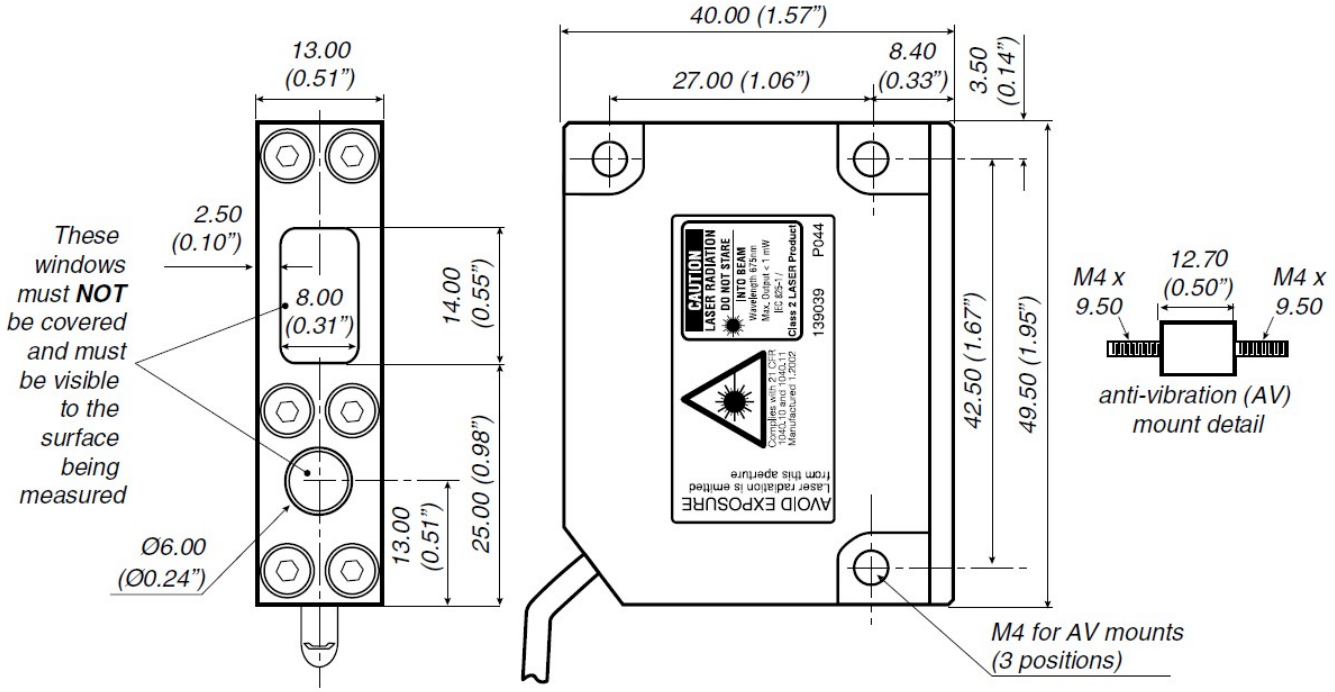
Electrical Data	
Supply Voltage	10 ... 28V
Supply Current	80mA
Output Voltage	0 .. 5.0V DC
Measurement Range	50mm ... 350mm
Calibration	60mm/V
Resolution	@50mm ±0.02mm ... @350mm ± 0.45mm
Linearity	@50mm ±0.06mm ... @350mm ± 1.5mm
Thermal Drift	±0.06% / °C
Laser Class 2	Conforms to IEC825-1/1993
Laser beam width	2.0mm
Laser wavelength	650nm
Ambient light immunity	100 kLux (sunlight)
Response Time	<2.5ms

Mechanical Data	
Material	Aluminium, anodized black
Dimensions	13 X 49.5 X 40mm
Weight	62g
Connector	Deutsch Autosport (optional)
Operating Temperature	0 ... +75°C
Storage Temperature	-20 ... +80°C
IP Rating	IP67

Ordering Information

Part Number	
01S-630044-FL	1m Flying lead variant
01S-630044-ASL	1m Autosport ASL connector variant

Dimensions



Dimensions in millimetres and (inches) [not to scale]