



Mini GPS Odometer Sender

*High quality GPS pulse sender
for automotive applications*

Hummingbird Electronics' Mini GPS Odometer Sender is a calibration free speed sender that provides distance travelled information in an independent manner. As there is no physical connection to sensitive vehicle sender or CAN-bus systems, vehicle warranties are unaffected by the use of this unit.

Using data received from the Global Positioning Satellite network, the GPS Odometer Sender calculates three-dimensional ground speed and provides a pulsed output compatible with existing mechanical speed senders. This state of the art solution eradicates the dependency on vehicle specific parameters, thereby reducing installation time and eradicating the need for calibration and recalibration.

Powerful Performance

Designed for harsh automotive environments, the module features transient voltage protection on the supply and short circuit protected outputs.

A 51 channel acquisition engine with the ability to track 14 satellites simultaneously; enhanced receiver sensitivity and active antenna results in fast time-to-first-velocity-calculation as well as the ability to operate in the harshest RF environments such as canyons and cities.

Last known position and satellite information critical to fast start-up are saved in case of power failure.

Three dimensional velocity calculations are accurate to 0.2km/h and pulse output rates are updated 5 times per second.

Compensation is provided for inaccuracies in pulse output that may occur due to loss of lock in tunnels and similar complex RF terrains. The proprietary compensation algorithm uses the positions at which lock was lost and then re-gained to estimate lost distance, which is then compensated for by increasing the output pulse rate until the lost distance has been regained.



The GPS Odometer Sender is supplied with either a magnetic or bulkhead mount antenna

Rugged Hardware

Mini GPS Odometer Sender is supplied in an ABS plastic enclosure that has been designed to be so small that it can be incorporated in the wiring loom of most installations. Antenna connection for the active antenna is provided through a gold-plated threaded SMA connector. The antenna is waterproof and is protected against UV radiation. The antenna is available in two options:

- magnetic mount, suitable for mounting in the interior of the vehicle, for example under the dashboard or rear window sill.
- bulkhead mount, suitable for exterior mount, for example on the roof of the cab.

Power to the unit and pulse outputs are provided through four colour coded wires.

For optimum performance, the antenna should be mounted horizontally and upright; and should have a clear view of the sky.

A red/green LED is provided to give the user status information. At power on, the LED will begin to flash red at 2Hz, indicating that the unit has power and is searching for satellites. When satellites have been acquired, the LED will remain red and on. The LED will flash green when the vehicle is moving.

www.gpspeed.com.au

(02)67658333

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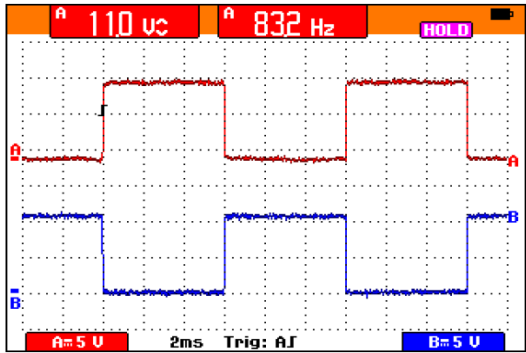
Magnetic mount antenna



Bulkhead mount antenna

Technical Specifications and Ordering Information

Part number	HMGM5000B	HMGM5000M
Antenna type	Bulkhead Mount	Magnetic Mount
Pulse rate (pulse per km)	5000 (The pulse rate will be increased during lost distance catch-up)	
Power consumption	43mA at 12V; 21mA at 24V typical	
Dimensions (mm)	46mm (L), 20mm (W), 12mm (H)	
Input voltage	minimum for operation 9V; maximum 36V	
Differential output pulses	square wave, peak to peak Vin; maximum current drain 25mA	
Acquisition time, loss of lock	less than 2s (90% of the time)	
Acquisition time, temp loss of power	less than 10s (50% of the time), less than 13s (90% of the time)	
Acquisition time, power-up	less than 38s (50% of the time), less than 42s (90% of the time)	
Accuracy, horizontal	less than 5m (50% of the time), less than 8m (90% of the time)	
Accuracy, altitude	less than 10m (50% of the time), less than 16m (90% of the time)	
Precision, velocity	less than 0.06m/sec or 0.22km/h	
Update rate	5 times per second (5Hz)	
RF interface	SMA connector supplied on magnetic and bulkhead antenna versions	
Antenna dimensions (mm)	51(l), 42(w), 12(h); cable length minimum 3m	
Operating temperature	-40°C to 85°C; 5% to 95% relative humidity	
General	14 channel tracking receiver	



Wiring Specification:

Red	input voltage (6V to 36V)
Black	ground (0V)
Green	pulse output (0 to 5V)
Blue	inverted pulse output

Output pulses at 60km/h for 12V input voltage