



GPS Speed Sender

*High quality GPS speed sender
for marine applications*

Hummingbird's GPS Speed Sender (GSS) provides a reliable calibration free replacement for mechanical speed senders.

Using data received from the Global Positioning Satellite network, the GPS Speed Sender calculates horizontal ground speed and provides a pulsed output compatible with most speedometers.

This high technology solution will work with all hull configurations and eradicates the need for pitot tubes or other mechanical measurement devices.

Powerful Performance

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

The ability to track 12 satellites simultaneously, enhanced receiver sensitivity and active antenna result in fast time-to-first-velocity-calculation as well as the ability to operate in the harshest RF environments such as harbours and canyons.

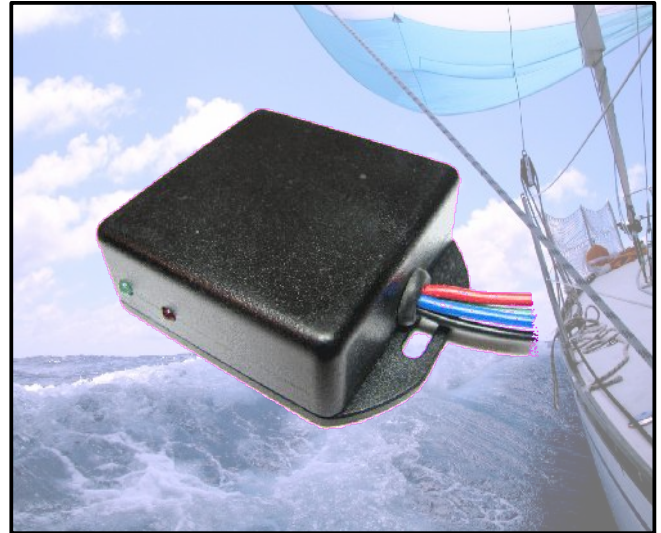
Last known position and satellite information critical to fast start-up are battery backed in case of power failure.

Only North-South and West-East velocity measurements are used to calculate final speed; with vertical effects due to swell being eliminated. Final speed measurements are accurate to 0.2km/h and pulse output rates are updated 4 times per second.

The number of pulses that are produced per kilometre travelled (ppk) can, with certain models, be set by the user between 1000ppk and 10 000ppk. The ppk value can be factory set for volume applications.

The GPS Speed Sender can be supplied with an external antenna (active) for challenging installations, or with an integrated antenna (passive) for cost sensitive applications.

GSS works equally well with speedometers calibrated in kilometers per hour, miles per hour or knots.



GPS Speed Sender - providing accurate speed information independent of hull type

Rugged Hardware

GSS is supplied in a rugged ABS plastic enclosure with provision for screw mounting when required. Antenna connection for the active antenna is provided through a gold-plated threaded SMA connector. The active antenna is available in two options:

- magnetic mount, suitable for mounting in the interior of the boat, for example under a fibreglass sill or instrument panel.
- bulkhead mount, suitable for exterior mount, for example on the roof of the cabin.

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

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


A red and a green LED are provided to give the user status information.

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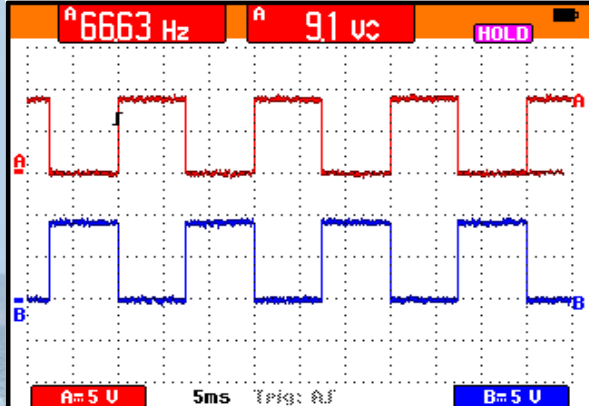
Technical Specifications and Ordering Information									
Part number	NEGS1A10MP	NEGS4000MP	NEGS8000MP	NEGS1A10MM	NEGS4000MM	NEGS8000MM	NEGS1A10MB	NEGS4000MB	NEGS8000MB
Antenna type	passive			magnetic mount			bulkhead mount		
Pulse rate (pulse per km)	variable	4000	8000	variable	4000	8000	variable	4000	8000
Power consumption	240mW			480mW (incl. antenna)			480mW (incl. Antenna)		
Dimensions (mm)	50(l), 67(w), 21(h)			55(l), 67(w), 21(h)			55(l), 67(w), 21(h)		
Input voltage	minimum for operation 6V; 12V to ensure 9.1V output pulse; maximum 36V								
Differential output pulses	peak to peak 9.1V; 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	4 times per second (4Hz)								
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	12 channel tracking receiver, battery backup 12 days								



Bulkhead mount antenna



Magnetic mount antenna



Output pulses at 60km/h with 4000ppk setting

Note: Passive units have a built in antenna and do not require either a magnetic mount or bulkhead mount antenna

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