



GPS Speed Sender

*High quality GPS speed sender
for automotive 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 three-dimensional ground speed and provides a pulsed output compatible with existing mechanical speed senders. This high technology solution eradicates the dependency on vehicle specific parameters, thereby reducing installation time and eradicating the need for periodic calibration.

Powerful Performance

Designed for harsh automotive 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 canyons and cities.

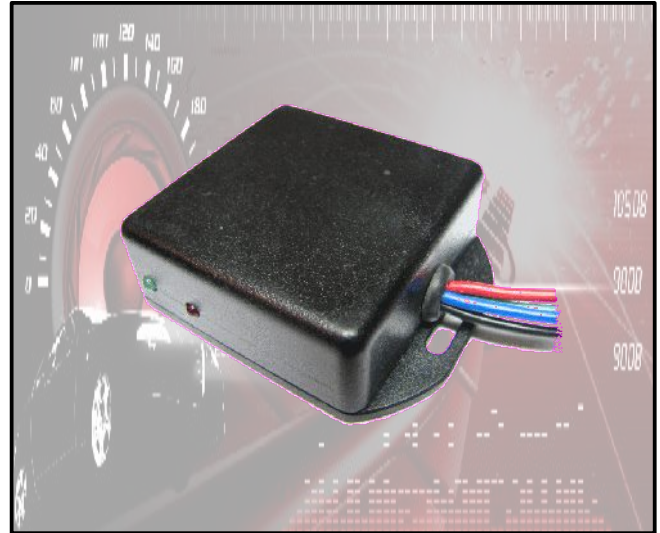
Last known position and satellite information critical to fast start-up are battery backed in case of power failure.

Three dimensional velocity calculations 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 or miles per hour.



GPS Speed Sender - providing accurate speed information independent of the vehicle

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 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 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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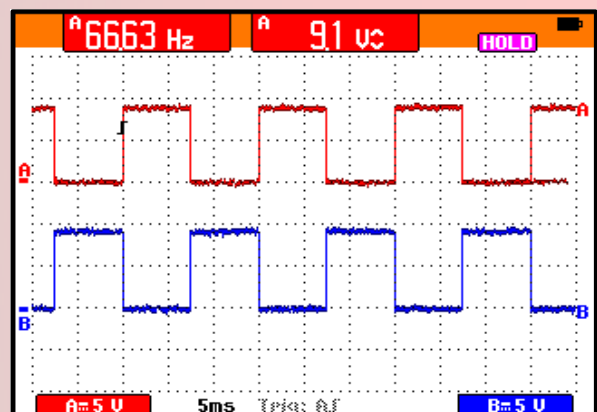
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| Technical Specifications and Ordering Information | | | | | | | | | |
|---|--|-----------|-----------|-----------------------|-----------|-----------|-----------------------|-----------|-----------|
| Part number | NEGS1A10P | NEGS4000P | NEGS8000P | NEGS1A10M | NEGS4000M | NEGS8000M | NEGS1A10B | NEGS4000B | NEGS8000B |
| 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 | | | | | | | | |



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



Output pulses at 60km/h with 4000ppk setting

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