

# GNSS Speed Sender

## ***High quality Speed Sender for automotive applications***

The Global Navigation Satellite System (GNSS) Speed Sender provides a reliable calibration free replacement for mechanical speed senders.

Using data received from satellites, the GNSS 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 American GPS, Russian GLONASS and Chinese BeiDOU navigation 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 10 times per second.

The device is fully configurable and offers the following features:

- 1000 to 10,000 pulses per kilometre (PPK) settable via adjustment screw.
- Fixed 2000, 4000, 8000 or 50,000 pulses per kilometre option.
- Option to add back distance lost in tunnels



*GNSS Speed Sender - providing accurate speed information independent of the vehicle*

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

The speed sender works equally well with speedometers calibrated in kilometres per hour or miles per hour

### **Rugged Hardware**

GNSS Speed Sender 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.

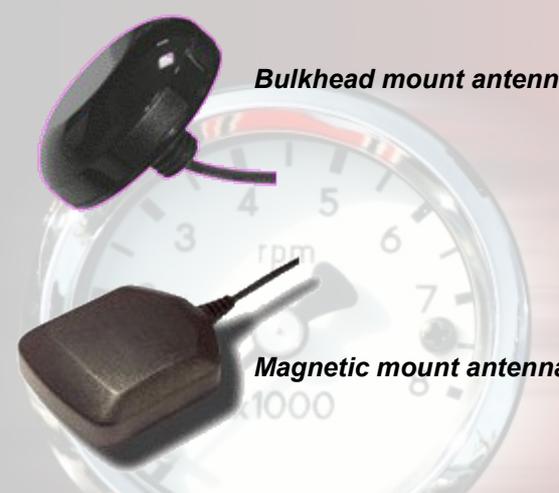
For optimum performance, the antenna should be mounted horizontally and upright; and should have a clear view of the sky.

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

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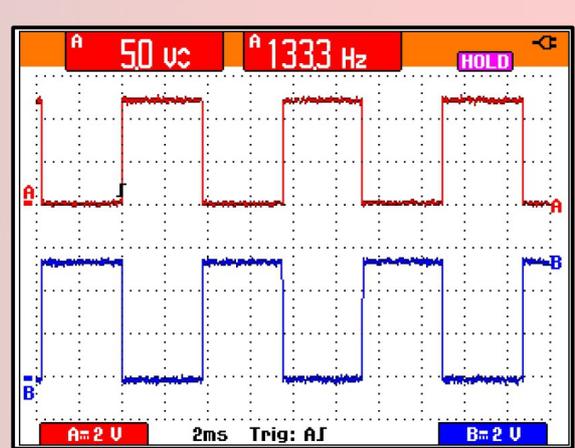
Technical Specifications and Ordering Information			
Part number	HMGS1A10CP	HMGS1A10CM	HMGS1A10CB
Antenna type	passive	magnetic mount	bulkhead mount
Pulse rate (pulse per km)	variable 1000 to 100,000 or fixed 2000, 4000, 8000, 50,000		
Power consumption	240mW	480mW (incl. antenna)	480mW (incl. Antenna)
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; maximum 36V		
Differential output pulses	square wave, peak to peak 5V, DC 2.5V; 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	10 times per second (10Hz)		
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	56 channel tracking receiver, battery backup 12 days		



**Bulkhead mount antenna**

**Magnetic mount antenna**

*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 8000ppk setting**