



Digital GPS Speedometer

*High quality GPS speedometer
for automotive applications*

Hummingbird Electronics' GPS Speedometers provide a quick to install, vehicle independent speed readout in vehicles that are not fitted with conventional speedometers.

Using data received from the Global Positioning Satellite network, the GPS Speedometer calculates three-dimensional ground speed and displays it on a clear to read, digital display.

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 1 inch high, high-brightness red LED digits. Automatic contrast adjustment ensures that the driver is able to read the display in daylight, and is not blinded at night.

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. Speed errors will occur in RF blackout zones such as tunnels; this is indicated to the driver through a flashing display.

Three dimensional velocity calculations are accurate to 0.2km/h and pulse output rates are updated 4 times per second.

Hummingbird's GPS Speedometer can be supplied with the readout in kilometers per hour or miles per hour.

A speed dependent switch with high current relay output is available as an option. Both normally-open and normally-closed outputs are provided. Typical applications for the speed switch would be driver over-speed warning or motion detection. Activation speed is user settable.

A maximum-speed recall-switch is available on all models. Press and hold the recall switch for 3 seconds to reset to 0.



GPS Speedometer – accurate, easy to read, simple to install supplement to conventional speedometers

Rugged Hardware

Hummingbird's GPS Speedometer is supplied in a rugged ABS plastic enclosure with a lexan facia. A fully adjustable dashboard mount stand allows for correct driver orientation.

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 switch outputs are provided through six colour coded wires.

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

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Technical Specifications and Ordering Information								
Part number	NESSKRBA	NESSKNBA	NESSKRMA	NESSKNMA	NESSMRBA	NESSMNBA	NESSMRMA	NESSMNMA
Speed unit	kilometers per hour				miles per hour			
Antenna type	bulkhead		magnetic mount		bulkhead		magnetic mount	
Speed switch	relay	none	relay	none	relay	none	relay	none
Input voltage	minimum 10V; maximum 36V							
Power consumption (W)	maximum 2.5W (200mA @ 12V) – all segments lit at full brightness							
Dimensions – display module (mm)	92mm(width), 66mm(height), 28mm(depth); digit height 1 inch							
Relay output	36V max, 4.5A max							
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)							
Speed range	minimum 2km/h; maximum 199km/h (or 199mi/h)							
Precision, velocity – preliminary	less than 0.06m/sec or 0.22km/h; resolution 1 unit (km/h or mi/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							
Part number for optional suction cup	NESS-suction							



Side view showing adjustable mount

Bulkhead mount antenna

Magnetic mount antenna

Optional suction mount



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