Digital GPS Speedometer

High quality GPS speedometer for automotive applications

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

Hummingbird's 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 20 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 10 times per second.

Hummingbird's GPS Speedometer can be user configured to work in kilometers per hour, miles per hour, knots or meters per minute.

A relay can be set to close when the speed exceeds a user specified set-point. Typical applications for the speed switch would be driver over-speed warning or motion detection. Activation speed is set via a dip switch internal to the device and can not be changed by the operator.

The maximum speed can be set to be between 0 and 999 or between 0 and 99.9. The more precise setting is suitable for slow vehicles like tractors.

Rugged Hardware

Hummingbird's GPS Speedometer is supplied in a rugged ABS plastic enclosure with a lexan fascia. 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.

www.gpsspeed.com.au

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Technical Specifications and Ordering Information		
Part number	HMSS1000BM	HMSS1000BB
Antenna type	Magnetic Mount with 5m cable	Bulkhead Mount with 5m cable
Input voltage	minimum 9V; maximum 36V	
Power consumption (W)	maximum 2.5W (200mA @ 12V) – all segments lit at full brightness	
Dimensions – display module (mm)	86mm(width), 66mm(height), 25mm(depth); digit height 1 inch	
Relay output	36V max, 1A 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 299km/h (or 299mi/h)	
Precision, velocity – preliminary	less than 0.06m/sec or 0.22km/h; resolution 1 unit (km/h or mi/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	12 channel tracking receiver, battery backup 12 days	
Part number for optional suction cup	HMSS-suction	

Dip Switch Settings

SW1-7: over-speed set-point = 64*SW1+32*SW2+16*SW3+8*SW4+4*SW5+2*SW6+SW7
SW8-9: speed unit (as per table below)
SW10: if ON, decimal place enabled

Example: speed 35km/h
SW8, SW9 = OFF for km/h
SW2 = ON (32), SW6 = ON (2), SW7 = ON (1)
32+2+1 = 35

Note: If GPS lock is lost, the unit will default to zero speed.

	SW8	SW9
km/h	OFF	OFF
mi/h	OFF	ON
knot	ON	OFF
m/min	ON	ON

Wiring

Red: Power (9-36V)
Black: Ground
Yellow / Green: Relay contacts (normally open)