



Overview

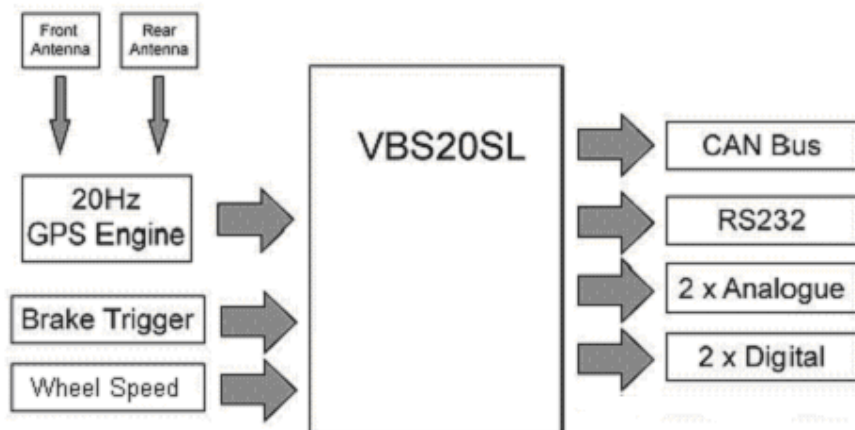
The VBS20SL is a multi-purpose non-contact speed sensor. Using an advanced dual antenna GPS engine, the VBS20SL can calculate not only speed and direction of travel of the vehicle but also an accurate slip angle. The VBS20SL also features a built-in graphic display allowing the user to set up and configure the unit without using a laptop PC.

The VBS20SL can be used in conjunction with any VBOX GPS datalogger, as well as any third-party dataloggers.



Features

- Non-contact 20Hz speed and distance measurement using GPS
- Slip angle, Yaw rate and True Heading measurement
- Pitch or Roll angle measurement
- 2 x 16 bit User configurable analogue outputs
- 2 x 24 bit digital outputs
- Brake / Event trigger input
- CAN bus interface for data output
- RS232 serial interface
- USB interface
- Wide 4.5V to 30V operating range



VBOX 20Hz Speed Sensor with Slip Angle

Channels

- | | |
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| <ul style="list-style-type: none"> • Slip Angle • Yaw Rate • Pitch or Roll Angle • True Heading • Lateral Velocity • Satellites in View • UTC Time • Latitude • Longitude • Velocity | <ul style="list-style-type: none"> • Heading • Altitude • Vertical Velocity • Distance • Longitudinal Acceleration • Lateral Acceleration • Distance from Trigger • Trigger Time • Trigger Velocity |
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GPS

Velocity		Distance	
Accuracy	0.1 Km/h (averaged over 4 samples)	Accuracy	0.05% (<50cm per Km)
Units	Km/h or Mph	Units	Metres / Feet
Update rate	20 Hz	Update rate	20Hz
Maximum velocity	1000 Mph	Resolution	1cm
Minimum velocity	0.1 Km/h	Height accuracy	6 Metres 95% CEP**
Resolution	0.01 Km/h	Height accuracy with DGPS	2 Metres 95% CEP**

Absolute Positioning

Accuracy	3m 95% CEP**
Accuracy with DGPS	1.8m 95% CEP**
Update rate	20 Hz
Resolution	1 cm

Heading

Resolution	0.01°
Accuracy	0.1°

Acceleration

Accuracy	0.5%
Maximum	20 G
Resolution	0.01 G
Update rate	20Hz

Slip Angle

Accuracy	0.5° (0.5m ant separation)
	0.25° (1m ant separation)
	0.1° (2m ant separation)

Time

Resolution	0.01 s
Accuracy	0.01 s

Power

Input Voltage range	4.5v-30v DC
Power	Max 4.5 watts

Environmental and physical

Weight	Approx 600 grammes
Size	170mm x 121mm x 41mm
Operating temperature	-10°C to +60°C
Storage temperature	-30°C to +80°C

Definitions

** CEP = Circle of Error Probable
95% CEP (Circle Error Probable) means 95% of the time the position readings will fall within a circle of the stated diameter

Outputs

CAN Bus

Bit rate	User selectable baud rate
Identifier type	11bit or 29bit
Data available	Slip Angle, Yaw Rate, Pitch or Roll Angle, True Heading, Lateral Velocity, Satellites in View, Time, Latitude, Longitude, Velocity, Heading, Altitude, Vertical velocity, Distance, Longitudinal acceleration & lateral acceleration, Distance from trigger, Trigger time, trigger Velocity

Analogue

Voltage range	-5V to +5Volts DC
Default setting *	Velocity 0.0125Volts per Km/h (0 to 400Km/h)
Accuracy	0.1 Km/h @ 100Km/h
Update rate	20Hz

Digital

Frequency range	DC to 44.4Khz
Default setting *	25Hz per Km/h (0 to 400Km/h) 90 pulses per metre
Accuracy	0.01Km/h @ 100Km/h
Update rate	20Hz

* The range settings can be adjusted by the user in software

Inputs

Wheel Speed

Voltage range	+/- 70V
Minimum signal amplitude	1V Pk-Pk
Frequency range	DC-20Khz
Timer	16bit

Brake/Event Trigger

Polarity	User selectable
Timer	16bit
Resolution	12µs