

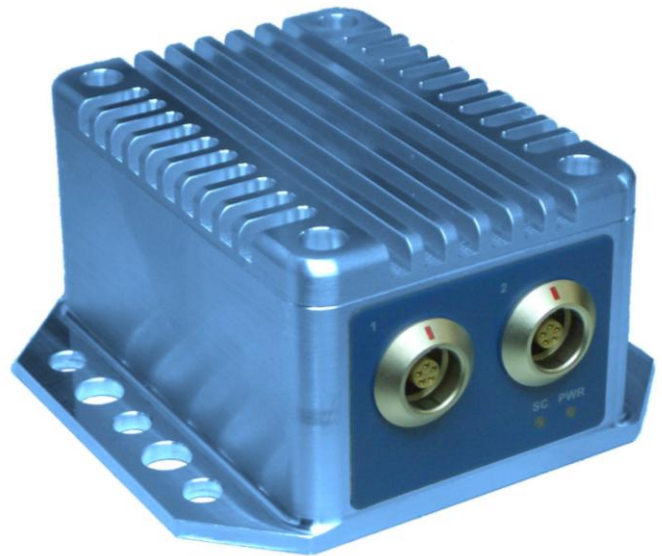
### Overview

The RLVBIMU02 is an advanced inertial measurement sensor containing three accelerometers and three yaw rate sensors which, when combined with the VBOX data logging system, can provide information such as vehicle pitch, roll and yaw.

The IMU is now constructed with a splash-proof casing, which is rated to a limited ingress IP rating of IP65, making it ideal for use on boats or in harsh environments.

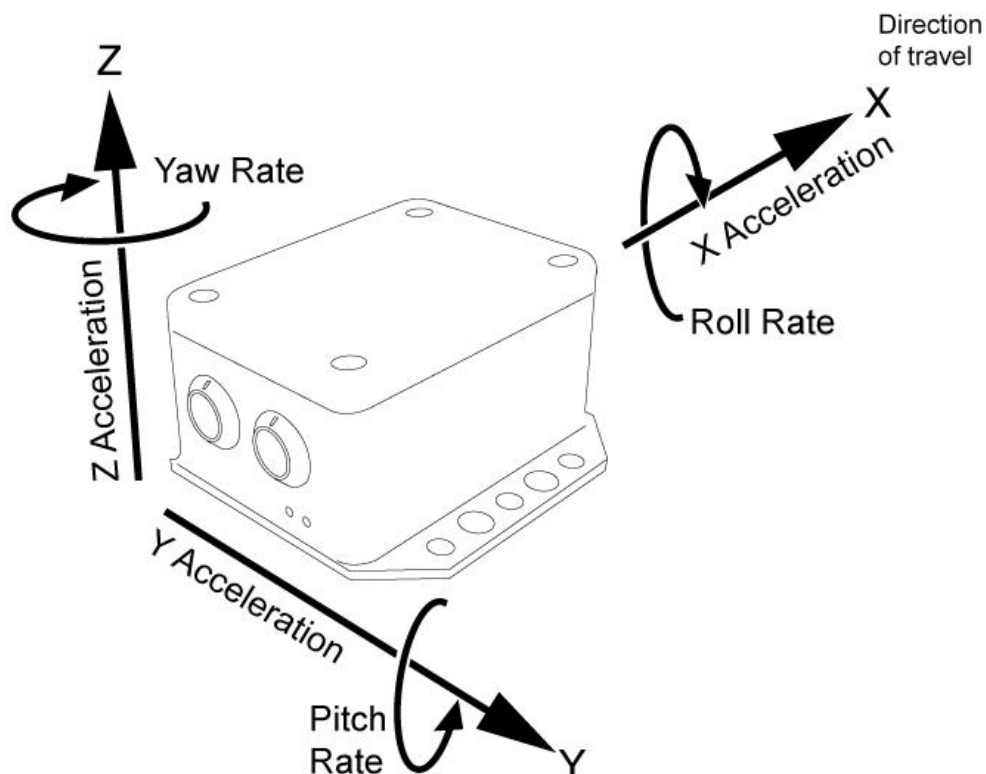
Using synchronous 24bit sampling for each of the internal sensors provides a high degree of accuracy with yaw rate resolution typically 0.01 degrees per second and acceleration resolution down to 0.002g.

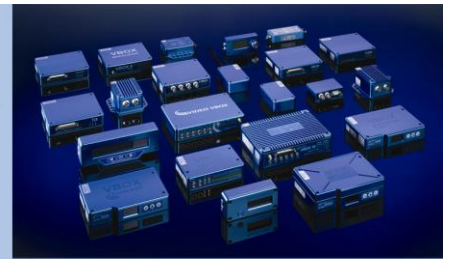
The IMU02 is designed for use with the Racelogic VBOX range of GPS data acquisition systems or as a stand-alone sensor with simple connection and configuration via the CAN bus interface.



### Features

- Yaw rate range  $\pm 150^\circ/\text{s}$
- Acceleration range  $\pm 1.7g$  in each axis
- Internal temperature compensation
- Yaw rate resolution  $0.01^\circ/\text{s}$
- Acceleration resolution 1mg
- CAN Bus interface



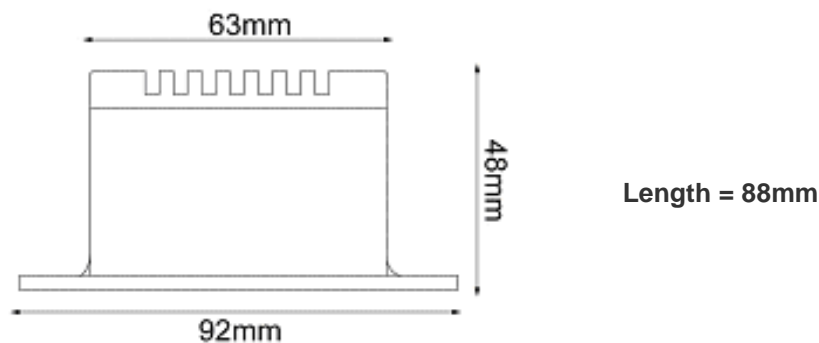


### Specification

<b>Number of output channels</b>	7				
<b>Channel names</b>	Yaw Rate, Pitch Rate, Roll Rate, X Accel, Y Accel, Z Accel, Temp				
<b>Parameter</b>	<b>Conditions</b>	<b>Max</b>	<b>Min</b>	<b>Typ</b>	<b>Unit</b>
<b>Rate sensors</b>	$T_A=25^{\circ}\text{C}$				
Dynamic Range	Full-Scale over Specifications Range		$\pm 150$		/s
Nonlinearity	Best Fit Straight Line % of full scale			0.1	%
Resolution				0.01	/s
Bandwidth		40			Hz
Bias Stability				+/-0.3	/s
<b>Acceleration</b>					
Range			$\pm 1.7$		g
Nonlinearity	% of full scale	$\pm 2.5$		$\pm 0.5$	%
Resolution			1		mg
Accuracy	0g-input	$\pm 0.02$			g
Accuracy	1g-input	$\pm 0.01$			g
Bandwidth		50			Hz
Max Ratings	Powered (0.5ms)	2000g			
<b>Temperature Sensor</b>					
Temperature range *		+50.0	-10		$^{\circ}\text{C}$
Temperature resolution				0.1	$^{\circ}\text{C}$
<b>Current</b>	~150mA				
<b>Voltage</b>	8 – 30V DC, Note: not suitable for use with a VBOX battery supply				
<b>Operating temperature</b>	-30 to +70 $^{\circ}\text{C}$				

\*Temperature Range over which the device has been calibrated

### Dimensions



### Lemo Socket Connections

Pin	I/O	Function
1	O	TxD, Serial Data Transmit - Configuration
2	I	RxD, Serial Data Receive - Configuration
3	I/O	CAN High
4	I/O	CAN Low
5	O	+ V Power 8V to 30V DC
Chassis		Ground

