

Yaw Rate Sensor (RLVBYAW03)



Racelogic's yaw rate sensor (RLVBYAW03) is an advanced vehicle yaw rate sensor with integral accelerometers. The accelerometers are mounted in the X and Y plane for measurement of lateral and longitudinal acceleration.

The RLVBYAW03 is 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.

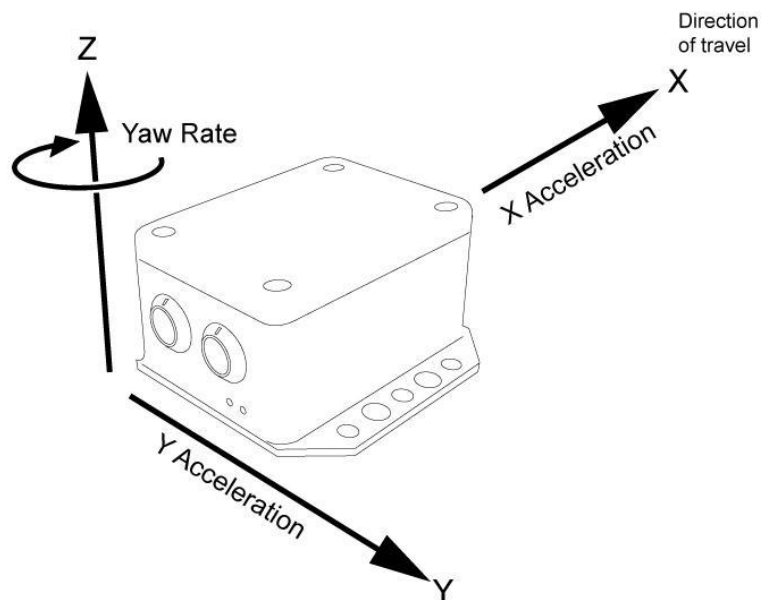
Using synchronous 24bit sampling for each of the internal sensors provides a high degree of accuracy with yaw rate resolution typically 0.01 degrees per second and acceleration resolution down to 0.001g.



The RLVBYAW03 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 $\pm 1.7\text{g}$ in each axis
- Internal temperature compensation
- Yaw rate resolution $0.01^\circ/\text{s}$
- Acceleration resolution 1mg
- CAN Bus interface



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(RLVBYAW03)



Specification

| Specification | |
|-------------------------------|---|
| Rate sensors | $T_A=25^{\circ}\text{C}$ |
| Dynamic Range | Full-Scale: ± 150 /s |
| Nonlinearity | % of full scale: 0.1% |
| Resolution | 0.01 /s |
| Bandwidth | 40 Hz |
| Bias Stability | ± 0.3 /s |
| Acceleration | |
| Range | $\pm 1.7\text{G}$ |
| Nonlinearity | % of full scale: (Min) $\pm 0.5\%$ - (Max) ± 2.5 |
| Resolution | 1mg |
| Accuracy | 0G-input: $\pm 0.02\text{G}$ |
| Accuracy | 1G-input: $\pm 0.01\text{G}$ |
| Bandwidth | 50 Hz |
| Max Ratings (Shock) | Powered (0.5ms): 2000g |
| Temperature Sensor | |
| Temperature calibration range | -10°C to 50°C |
| Temperature resolution | 0.1°C |
| Current | $\sim 150\text{mA}$ |
| Voltage | 8 – 30V DC. Not suitable for use with a VBOX battery supply |
| Operating temperature | -30 to $+70^{\circ}\text{C}$ |

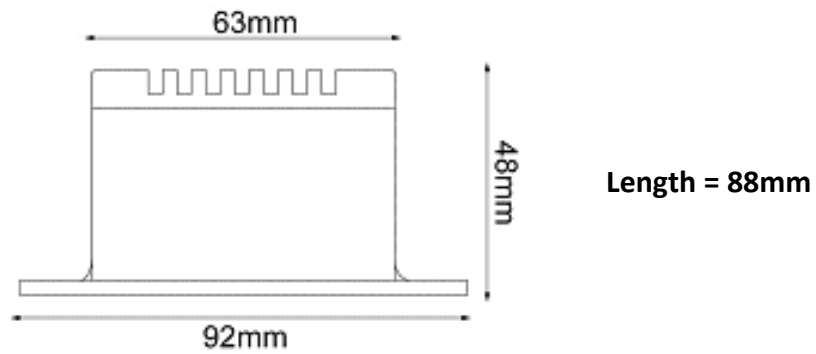
Outputs

| Outputs | |
|--------------------|--|
| Number of Channels | 4 |
| Channel Names | Yaw Rate, X acceleration, Y acceleration, Temp |

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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 |

