

Orientus is a ruggedised miniature sensor and AHRS that provides accurate orientation under the most demanding conditions.

It combines temperature calibrated accelerometers, gyroscopes and magnetometers in a sophisticated fusion algorithm to deliver accurate and reliable orientation.



PERFORMANCE

- 0.2 ° Roll and Pitch
- 0.5 ° Heading
- 3 °/hr MEMS Gyroscope
- 1000 Hz Update Rate
- 2000 g Shock Limit

KEY FEATURES

- Linear Acceleration Compensation
- Magnetic Interference Mitigation
- Low Weight : 25 grams
- Small Size : 30 x 30 x 24 mm
- Low Power : 65 mA @ 5V

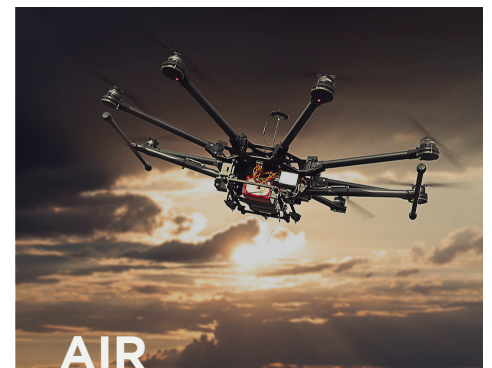
APPLICATIONS



- AUV Orientation
- ROV Orientation



- Robotics Control & Orientation
- Stabilisation & Pointing
- Human Movement



- UAV Orientation
- Stabilisation & Pointing

SPECIFICATIONS

ORIENTATION

Roll & Pitch Accuracy (Static)	0.2 °
Heading Accuracy (Static)	0.5 °
Roll & Pitch Accuracy (Dynamic)	0.6 °
Heading Accuracy (Dynamic)	1.0 °
Orientation Range	Unlimited
Internal Filter Rate	1000 Hz
Output Data Rate	Up to 1000 Hz
Latency	0.3 ms

HARDWARE

Operating Voltage	4 to 36 V
Input Protection	± 60 V
Power Consumption	0.325 W
Operating Temperature	-40 °C to 85 °C
Environmental Protection	IP68 MIL-STD-810G
MTBF	380,000 hrs
Shock Limit	2000 g
Dimensions (excluding tabs)	30 x 30 x 24 mm
Dimensions (including tabs)	30 x 40.6 x 24 mm
Weight	25 grams

SENSORS

SENSOR	ACCELEROMETERS	GYROSCOPES	MAGNETOMETERS
Range (dynamic)	± 2 g ± 4 g ± 16 g	± 250 °/s ± 500 °/s ± 2000 °/s	± 2 G ± 4 G ± 8 G
Bias Instability	20 µg	3 °/hr	-
Initial Bias	< 5 mg	< 0.2 °/s	-
Initial Scaling Error	< 0.06 %	< 0.04 %	< 0.07 %
Scale Factor Stability	< 0.06 %	< 0.05 %	< 0.09 %
Non-linearity	< 0.05 %	< 0.05 %	< 0.08 %
Cross-axis Alignment Error	< 0.05 °	< 0.05 °	< 0.05 °
Noise Density	100 µg/√Hz	0.004 °/s/√Hz	210 µG/√Hz
Bandwidth	400 Hz	400 Hz	110 Hz

COMMUNICATION

Interface	RS232
Speed	4800 to 1M baud
Protocol	AN Packet Protocol, NMEA or TSS
Peripheral Interfaces	2x GPIO and Auxiliary RS232
GPIO Level	5 V
GPIO Functions	NMEA input/output Novatel input AN Packet Protocol input/output Magnetometers disable Set zero orientation Packet trigger u-blox input TSS output Custom (contact us)