

Motus is a miniature ultra high accuracy MEMS IMU. It features some of the highest accuracy MEMS accelerometers and gyroscopes currently available combined with magnetometers.

Motus is fully calibrated for all sensor errors over a wide temperature range and can be software upgraded to AHRS or INS functionality. It is available in both OEM and enclosed packages.



PERFORMANCE

- 0.03 ° Roll and Pitch
- 0.08 ° Heading
- 0.4 °/hr MEMS Gyroscope
- 1000 Hz Update Rate
- 2000 g Shock Limit

KEY FEATURES

- Hot Start Time : 2 seconds
- IMU, AHRS and INS options
- 2 versions : OEM or Rugged

APPLICATIONS



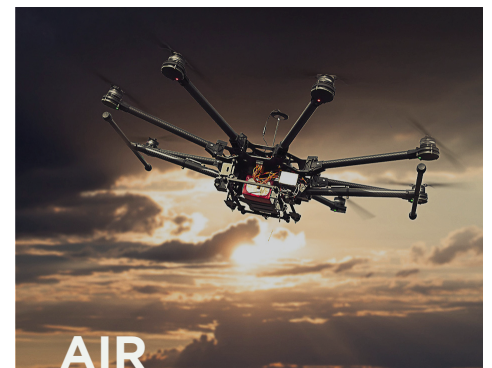
SEA

- AUV Navigation
- ROV Navigation
- Hydrography



LAND

- Gimbal Stabilisation
- Structural Monitoring
- Vehicle Navigation



AIR

- UAV Geopointing
- UAV Lidar
- Gimbal Stabilisation

SPECIFICATIONS

HARDWARE

Operating Voltage (OEM)	5 V
Operating Voltage (Enclosed)	5 to 36 V
Input Protection (Enclosed only)	± 60 V
Power Consumption (Typical)	0.95 W
Hot Start Battery Capacity	> 48 hrs
Hot Start Battery Charge Time	30 mins
Hot Start Battery Endurance	> 10 years
Operating Temperature	-40 °C to 85 °C
Environmental Protection (Enclosed)	IP67 MIL-STD-810G
MTBF	200,000 hrs
Shock Limit	2000 g
Vibration Limit	8 g
Dimensions (OEM)	31 x 31 x 24 mm
Dimensions (Enclosed)	42 x 55 x 30 mm
Weight (OEM)	26 grams
Weight (Enclosed)	72 grams

COMMUNICATION

Interface (OEM)	UART
Interface (Enclosed)	RS232 (RS422 version available)
Speed	4800 to 2M baud
Protocol	AN Packet Protocol or NMEA
Peripheral Interface	2x GPIO and Auxiliary RS232
GPIO Level	5 - 20 V
GPIO Functions	1PPS Input Sensor sync input Sensor sync output Odometer Stationary Air Data Input NMEA input/output Novatel GNSS input Trimble GNSS input AN Packet Protocol

SENSORS

SENSOR	ACCELEROMETERS	GYROSCOPES	MAGNETOMETERS
Range	± 10 g	± 475 °/s	± 8 G
Bias Instability	8 ug	0.4 °/hr	-
Initial Bias	< 1 mg	< 10 °/hr	-
Initial Scaling Error	< 0.03 %	< 0.02 %	< 0.07 %
Scale Factor Stability	< 0.04 %	< 0.03 %	< 0.09 %
Non-linearity	< 0.05 %	< 0.03 %	< 0.08 %
Cross-axis Alignment Error	< 0.05 °	< 0.05 °	< 0.05 °
Noise Density	12 ug/√Hz	7 °/hr/√Hz	210 uG/√Hz
Bandwidth	290 Hz	200 Hz	110 Hz