

Ellipse Series Ellipse-A

Attitude and Heading Reference System

MADE IN FRANCE



Compact & Robust Inertial Sensors
for Accurate Orientation & Heave



No Export
Restriction



2-year
Warranty



Motion & Heave Monitoring



Subsea Navigation



Pointing & Stabilization

The Ellipse AHRS series integrates Inertial Measurement Unit (IMU) with magnetometers to provide **reliable** orientation & heave in both low and high **dynamic** environments & mitigate the transient magnetic disturbances.



Reliable roll, pitch
and heading

ROS *px4hawk*

ARDUPILOT

Compatible drivers



Auto-adjusting
heave

Accurate & Reliable
Orientation



Immunity to transient
magnetic disturbances



Vibration resilient



Built-in magnetometers with
advanced magnetic calibration

Specifications

Each of our sensors is subjected to a thorough calibration and testing process across its entire operating temperature range, at our manufacturing facilities. This guarantees all delivered products will meet their specifications for their entire lifetime without the need for a recalibration.

SYSTEM PERFORMANCE *1-sigma error over the full temperature range.*

Environment	Static	Dynamics ⁽²⁾
Roll / Pitch	0.1°	0.4°
Heading ⁽¹⁾	0.8°	1°

⁽¹⁾ Magnetic heading under homogeneous magnetic field after calibration

⁽²⁾ Evaluated for typical marine dynamics

SENSORS

	Accelerometers	Gyroscopes	Magnetometers
Measurement range	Marine: 8 g Land/Air: 20 g High Dynamics: 40 g	Marine: 450°/s Land/Air: 450°/s High Dynamics: 1000°/s	50 Gauss
Scale factor error	1000 ppm	500 ppm	< 0.5%
Long term bias repeatability	1.5 mg	500°/h	
In run bias instability	14 ug	7°/h	1.5 mGauss
Random walk	0.03 m/s/√h	0.18 °/√h	3 mGauss
VRE	0.05 mg/g ²	1°/h/g ²	-
Bandwidth	390 Hz	133 Hz	22 Hz

INTERFACES

Protocols	sbgEcom (binary), REST API, NMEA, third party protocols
Output rate	Up to 1 kHz (IMU & Euler)
Main Serial Interface	RS-232, RS-422, USB - up to 2 Mbps
CAN interface	CAN 2.0A/B - up to 1 Mbps
Sync I/O	2x Sync inputs (RS232), 1x Sync output (TTL)

VERSIONS

Box version are IP68, resistant to dust and water. OEM version are PCB mounted for tight integration.

	Box 	OEM 
Dimensions	46 x 45 x 24 mm	29.5 x 25.5 x 11 mm
Weight	45 g	8 g

HEAVE PERFORMANCE *Available on marine version*

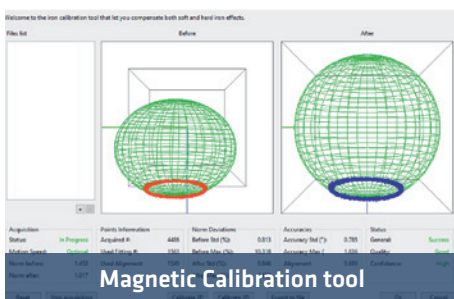
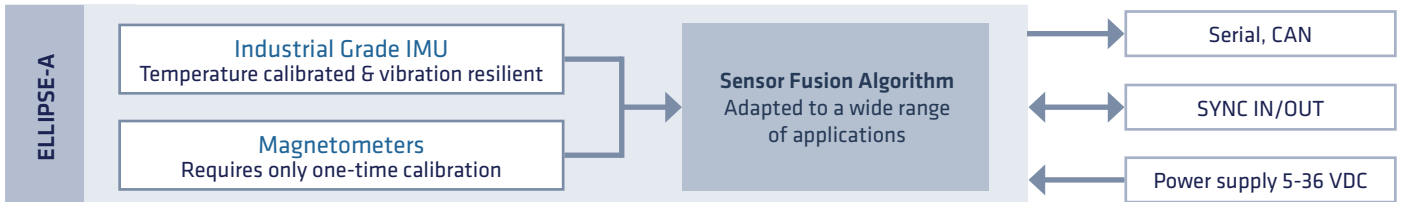
Accuracy	5 cm or 5%	Whichever is greater
Wave period	0 to 20 s	Auto-adjusting

ELECTRICAL & ENVIRONMENTAL

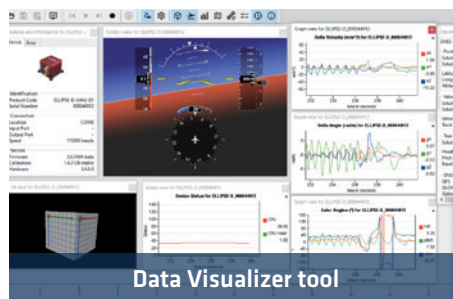
Input voltage	5 - 36 VDC
Power consumption	< 300 mW
Operating temperature	-40 to 85 °C
Shock limit	500 g
Operating vibration	8 g RMS (20 Hz to 2 kHz per MIL-STD 810G)
MTBF	218,000 hours

Communication interface: **REST API / C library**

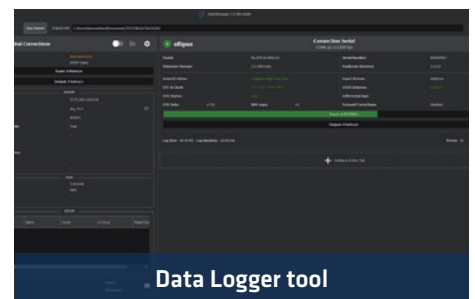
FUNCTIONAL BLOCK DIAGRAM



CLI version available



Data Visualizer tool



Data Logger tool

Free Technical Support

Lifetime Firmware Updates

2-year Warranty



www.sbg-systems.com/contact

