

PRODUCT DATA SHEET

MARSNAV AHRS 100



OVERVIEW:

MARSNAV-AHRS 100 is a compact, cost-effective navigation solution based on an Adaptive Extended Kalman Filter (AEKF) algorithm, delivering precise roll, pitch, and heading data for accurate attitude determination under 200 Hz update rate. Built with an industrial-grade sensor (9-DOF), it ensures robust performance and stabilization in dynamic land, marine, and aerospace environments.



**AHRS
Stabilization**



**Bias Tracking
and Estimation**



**Environmental
Adaptability**



**Quaternion
based**



**Precision
Attitude Estimation**



**Intuitive
Interface**



**Static and Dynamic
Accuracy**



**Easy
Installation**



**Cost-Effective
Precision**

MARSNAV AHRS 100

CAPABILITIES:

- **Bias Estimation & Tracking**
- **Adaptive Noise Modeling**
- **Real-Time Stabilization**
- **Compact and Scalable**
- **Stay level and precise**

SPECIFICATIONS:

Orientation Performance

Pitch/Roll (Static)	0.5 deg RMS
Pitch/Roll (Dynamic)	0.5 deg RMS
Yaw (Static)	1 deg RMS
Yaw (Dynamic)	1 deg RMS

Accelerometer Specifications

Measurement Range	User selectable $\pm 2.5g$ & $\pm 10g$
Resolution	0.079mg (2.5g) / 0.313mg (10g)
Linearity	0.1%
Operating Temperature	-40 to +125 °C
Noise	1mg

Gyroscope Specifications

Measurement Range	User selectable $\pm 150^\circ/s$ & $\pm 300^\circ/s$
Resolution	0.005°/s ($\pm 150^\circ/s$) / 0.01°/s ($\pm 300^\circ/s$)
Linearity	0.1%
Operating Temperature	-40 to +125 °C
Noise	0.06°/s

Magnetometer Specifications

Measurement Range	-800 to +800 μT
Resolution	13 nT
Linearity	0.5% over 200 μT
Operating Temperature	-40 to +85 °C
Noise	20 nT

Board Specifications

Input Voltage	3.3 – 20 V
Dimensions (mm, H x W x L)	OEM: 1.63 x 40 x 50 Boxed: 25 x 45 x 68
Weight	50 g
Hardware Interface	RS232 (up to 250kbps)
Operating Temperature	-40 to +85 °C
Output Data Rate	Up to 200Hz

Software Suite

MARS Navigator v1.0