

NAV440

GPS-Aided MEMS Inertial System

MOOG

CROSSBOW



Low-cost MEMS GPS/IMU

Moog Crossbow's NAV440 is an affordable, fully-integrated GPS-aided Attitude and Heading Reference System (AHRS) and GPS solution. Moog Crossbow has thousands of inertial systems fielded worldwide for use in U.S. DOD and Coalition Forces programs.

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DESCRIPTION

The Moog Crossbow NAV440 is a fully-integrated combined GPS navigation and GPS-aided Attitude & Heading Reference System (AHRS) solution. The NAV440 provides full inertial data (angles, rates, accels) and GPS position, along with inertially computed velocity that provides significant improvement in stability and higher data rates compared with stand-alone GPS velocity measurements.

The NAV440 integrates highly reliable MEMS sensors (gyros and accelerometers), 3-axis magnetometer, and a WAAS/EGNOS-enabled GPS receiver all in a compact and rugged environmentally sealed enclosure. The NAV440 provides consistent performance in challenging operating environments, and is user-configurable for a wide variety of applications such as unmanned vehicle control, land vehicle guidance, avionics systems, and platform stabilization.



KEY FEATURES

- Pitch and roll accuracy of $<0.4^\circ$
- Output data rate up to 100 Hz
- High-range sensor options ($400^\circ/\text{sec}$, 10g)
- WAAS and EGNOS enable GPS
- Low power $<4\text{W}$ at 28 VDC
- High reliability, MTBF $>25,000$ hours
- Rugged sealed enclosure
- Certified for DO-160D environments

SPECIFICATIONS

Environment

Operating Temperature -40° to +71°C
Enclosure IP66 compliant

Electrical

Input Voltage 9 to 42 VDC
Power Consumption $<4\text{ W}$
Digital Interface RS-422

Physical

Size 3.0" w x 3.75" l x 3.0" h
Weight 1.3 lbs (0.58 kg)
Interface Connector DB15, D-sub 15 pin Male
GPS Antenna Connector SMA Male

PERFORMANCE

Position/Velocity

Position Accuracy $<3.0\text{ m CEP}$
1PPS Accuracy $\pm 50\text{ ns}$

Heading

Accuracy $<1.0^\circ\text{ rms (magnetic)}$
 $<0.75^\circ\text{ rms (with GPS aiding)}$

Attitude

Range: Roll, Pitch $\pm 180^\circ, \pm 90^\circ$
Accuracy $<0.4^\circ$

Angular Rate

Range: Roll, Pitch, Yaw $\pm 200^\circ$
Bias Stability in run $<10^\circ/\text{hr}$
Bias Stability over temp $<0.02^\circ/\text{sec}$

Acceleration

Input Range $\pm 4\text{ g or } \pm 10\text{ g}$
Bias Stability in run $<1\text{ mg}$
Bias Stability over temp $<4\text{ mg}$

ORDERING INFORMATION

Model

NAV440CA-200-2

Description

GPS-Aided MEMS Inertial System
Includes NAV-VIEW software, User's manual,
Quick start guide, GPS Antenna, and cable.

For more information

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Specifications subject to change without prior notice