



NAV440

GPS-Aided MEMS Inertial System



NAV440

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 standalone 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 $<0.4^{\circ}$
- WAAS and EGNOS enable GPS
- High reliability, MTBF $>25,000$ hours
- Rugged sealed enclosure
- Certified for DO-160D environments
- Output data rate up to 100 Hz
- Low power $< 4W$ at 28 VDC

SPECIFICATIONS

Environment	Operating Temperature	-40° to +71°C
	Enclosure	IP66 compliant
Electrical	Input Voltage	9 to 42 VDC
	Power Consumption	$< 4 W$
	Digital Interface	RS-232
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	$<3.0 m$ CEP
	1PPS Accuracy	$\pm 50 ns$
Heading	Accuracy	$<1.0^{\circ}$ rms (magnetic)
		$<0.75^{\circ}$ 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	$<10^{\circ}/hr$
	Bias Stability over temp	$<0.02^{\circ}/sec$
Acceleration	Input Range	$\pm 4 g$
	Bias Stability in run	$<1 mg$
	Bias Stability over temp	$<4 mg$

ORDERING INFORMATION

Model	Description
NAV440CA-202	GPS-Aided MEMS Inertial System Includes NAV-VIEW software, User's manual, Quick start guide, GPS Antenna, and cable.
NAV440CA-402	GPS-Aided MEMS Inertial System with $\pm 10g$ accelerometers and $\pm 400^{\circ}/s$ rates. Includes NAV-VIEW software, User's manual, Quick start guide, GPS Antenna, and cable.

