

THE VALUE OF PERFORMANCE.

NORTHROP GRUMMAN

LN-100G

Embedded INS/GPS (EGI)

The LN-100G is a versatile Inertial Navigation System/Global Positioning System (INS/GPS) capable of performing high-accuracy navigation while supplying unsurpassed sensor stability for superior geo-location needs.

Description

The LN-100G is a non-dithered 0.8 nm/hr free INS/GPS utilizing the Zero-Lock™ Gyro (ZLG™) and various GPS solutions. The LN-100G is ideally suited for use as a Synthetic Aperture Radar, electro-optical reference, sensor stabilization or underwater system due to the absence of acoustic noise.

Interface Options

The LN-100G is currently equipped to output either digital or analog synchro outputs. The digital outputs are MIL-STD-1553, ARINC-429, and RS-422. There are several options for analog outputs to enable use in retrofit applications.

Applications

The LN-100G combines the high reliability and performance of the LN-100, using non-dithered laser gyros, with the latest GPS receiver technology.

The LN-100/LN-100G has now been selected by more than 70 customers, including the U.S. Air Force, Navy, Army, Marine Corps and Coast Guard, in addition to over 25 international applications. These units are flying in various aircraft, unmanned aerial vehicles, unmanned undersea vehicles, launch vehicles, PODs, missiles, fighters, a variety of helicopters, and transport aircraft (e.g., C-130, P-3, C-295).

Advantages

By combining the ZLG™ and GPS, the LN-100G represents the highest quality INS/GPS in the world. The LN-100G optimally combines INS and GPS features to provide a tightly integrated

solution for enhanced position, velocity, attitude, and pointing performance, as well as improved GPS acquisition and anti-jam capabilities. The system is capable of AR-57 shipboard alignment.

The LN-100G provides three simultaneous navigation solutions: hybrid GPS/INS, Free Inertial, and GPS Only. The LN-100G has been integrated with All-In-View GPS, both Precise Positioning Service (PPS) (P(Y) and SAASM codes) and Standard Positioning Services (SPS), to provide users with superior navigation performance for geo-location and transfer of remote sensors.

The LN-100G has options for several different GPS receivers, including P(Y) code, C/A code, radio frequency and infrared. There are also two spare card slots for the addition of analog I/O modules, ARINC interfaces, and other expansion modules.

Growth

The LN-100G has the growth capability to support any differential GPS solution, along with the Real Time Kinematic algorithms to

provide the accuracy for a Joint Precision Approach and Landing System solution.

Performance		
Position	Inertial Only	GPS/Inertial
4-minute gyrocompass align	0.8/0.6** nmi/hr	7m CEP
4 plus 4-minute EIA* align	0.5 nmi/hr	7m CEP
After loss of GPS		120m/20 min
Velocity (rms)	0.8 m/sec (2.5 ft/sec)	0.008 m/sec (0.026 ft/sec)
Attitude – pitch, roll, azimuth (rms)	0.05°	0.02°
* Enhanced Interrupted Align – after initial align, aircraft taxis to heading change >70° to continue align.		
** Available for special order.		

Characteristics		Features	
Power, Running	37.5W (28 Vdc)	Acceleration	16g all axes
Dimensions	Length: 11.0 in. (27.9 cm), Width: 7.0 in. (17.8 cm), Height: 7.0 in. (17.8 cm)	Attitude (All Axes)	Unlimited
Optional Mount Dimensions	Length: 13.7 in. (34.8 cm), Width: 7.2 in. (18.3 cm), Height: 0.75 in. (1.9 cm)	RS-422	Standard Digital Format
Weight	21.6 lb (9.8 kg)	Roll, Pitch, Azimuth Rate	>400°/sec
Optional Mount Weight	2.5 lb (1.1 kg)	Roll, Pitch, Azimuth Acceleration	>1500°/sec ²
Temperature	-54°C (-65°F) to 71°C (160°F)	Digital Output	2-dual MIL-STD-1553/ RS-422/ARINC 429
Cooling	Free convection	Analog Output (Pitch, Roll, Heading), optional	3-wire or 2-wire synchro
Altitude	-2,100 to 70,000 ft, (-640.08 m to 21,336 m) Class 2 (2X optional)	Output Options	Range/Bearing
Vibration (random)	8.1g rms performance	GPS Receiver Operating Frequencies	L1/L2
Shock	21g, 40 msec	Antispoof/Enhanced	P(Y) code/receiver or SAASM code/receiver
Vibration (sine)	±5g sine, 5 to 2,000 Hz	Anti-Jam	Aiding
Environment	Per MIL-STD-810C	Channels	12 or All-In View
Acoustic Noise	140 dB	Calibration Interval	No scheduled calibration required
MTBF	14,400 hours (AIC)	Operational Service	20+ years/8,100 hours (AUF)
Maintainability	Two-level extensive BIT; no flight-line test equipment required		

For more information, please contact:

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