

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

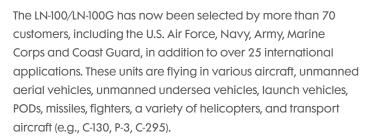
The LN-100G is a non-dithered 0.8 nm/hr free inertial INS/GPS utilizing the Zero-Lock™ Gyro (ZLG™) and various GPS solutions. The LN-100G is ideally suited for use as a Synthetic Aperture Radar, electro-optical reference, sensor stabilization or underwater system due to the absence of acoustic noise.

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.



Advantages

By combining the ZLG™ and GPS, the LN-100G represents the highest quality EGI 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		
Power, Running	37.5W (28 Vdc)	
Dimensions	Length: 11.0 in. (27.9 cm), Width: 7.0 in. (17.8 cm), Height: 7.0 in. (17.8 cm)	
Optional Mount Dimensions	Length: 13.7 in. (34.8 cm), Width: 7.2 in. (18.3 cm), Height: 0.75 in. (1.9 cm)	
Weight	21.6 lb (9.8 kg)	
Optional Mount Weight	2.5 lb (1.1 kg)	
Temperature	-54°C (-65°F) to 71°C (160°F)	
Cooling	Free convection	
Altitude	-2,100 to 70,000 ft, (-640.08 m to 21,336 m) Class 2 (2X optional)	
Vibration (random)	8.1g rms performance	
Shock	21g, 40 msec	
Vibration (sine)	±5g sine, 5 to 2,000 Hz	
Environment	Per MIL-STD-810C	
Acoustic Noise	140 dB	
MTBF	14,400 hours (AIC)	
Maintainability	Two-level extensive BIT; no flight-line	

Features		
Acceleration	16g all axes	
Attitude	Unlimited	
RS-422	Standard Digital Format	
Roll, Pitch, Azimuth Rate	>400°/sec	
Roll, Pitch, Azimuth Acceleration	>1500°/sec²	
Digital Output	2-dual MIL-STD-1553/ RS-422/ARINC 429	
Analog Output (Pitch, Roll, Heading), optional	3-wire or 2-wire synchro	
Output Options	Range/Bearing	
GPS Receiver Operating Frequencies	L1/L2	
Antispoof/Enhanced	P(Y) code/receiver or SAASM code/receiver	
Anti-Jam	Aiding	
Channels	12 or All-In-View	
Calibration Interval	No scheduled calibration required	
Operational Service	20+ years/8,100 hours (AUF)	

For more information, please contact:

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