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NORTHROP GRUMMAN



LN-270

INS/GPS Navigation and Pointing/Stabilization System (EGI)

The LN-270 is a highly adaptable Inertial Navigation System/Global Positioning System (INS/GPS) that can be used for navigation or as a pointing/stabilization solution on land.

Description

Northrop Grumman's LN-270 is an integrated land navigator, used as a precision pointing/stabilization system for ground-based and marine military applications. The LN-270 combines a high accuracy, integrated fiber-optic gyro (FOG), an INS, and a 12-channel P(Y) code GPS. The non-dithered inertial sensor achieves the most precise pointing information for increased sensor accuracy. Additionally, the low noise FOG technology eliminates self-induced acceleration and velocity noise.

Interface Options

The LN-270 is currently equipped with RS-422 and RS-485 interfaces. Additionally, future growth of the

interface will allow for Gigabit Ethernet. The LN-270 supports a ICD-GPS-153 interface for military applications that desire to use a Defense Advanced GPS Receiver or other external GPS unit.

Applications

The LN-270 is a tightly coupled, integrated INS/GPS that provides improved performance for navigation of manned and unmanned vehicles, geo-location of sensor targeting, and the enhanced ability for turret stabilization/pointing. Additionally, the LN-270 is integrated with a vehicle motion sensor to provide unsurpassed navigation performance in GPS-challenged areas and a Ground Rotational Radar system, producing superior user performance. This results in unequalled navigation and pointing stabilization performance as well as the most accurate target location.

Advantages

- Proven lightweight, low-cost FOG technology
- Lowest weight and volume in performance class
- Three independent navigation solutions:
 - Blended INS/GPS
 - Smoothed Nav
 - GPS only
- Extremely high reliability of over 20,000 hours for mean time between failures
- Available in performance ranges of 1 mil, 2 mil and 5 mil
- Non-dithered inertial sensor allowing for more accuracy
- Ruggedized package for artillery environments

DGPS Options

The LN-270 has been integrated with the Starfire™ and OmniStar™ differential GPS solution and achieved sub-meter navigation accuracy.

Growth

The LN-270 is available with an integrated high anti-jam GPS subsystem and has the ability

to integrate with M-Code or 24-channel GPS when available.

Performance		
	Inertial/Odometer	GPS Aided
Position	0.25 % - 1% DT (>4 km) (Horizontal), 0.067% - 1% DT (>10 km) (Vertical)	<10m (32.8 ft) CEP
Pointing	<1.0 - 5.0 mil	<1.0 - 5.0 mil
Pitch, Roll (rms)	<0.3 - 1.0 mil	<0.3 - 1.0 mil
Alignment Time	15 min (gyrocompass), 30 sec (stored heading), No fixed interval	<10 min TTFF (cold start)
ZUPTS Operating Modes	Gyrocompass align; stored heading align; Shoot-on-the-Move; odometer; position fix	Moving base alignment; aided navigation

Characteristics	
Power	MIL-STD-1275A, 25W - 30W (digital)
Dimensions (max)	Length: 10.19 in. (25.88 cm), Width: 7.64 in. (19.41 cm), Height: 5.49 in. (13.94 cm)
Weight	12.7 lb (5.8 kg)
Temperature	-54°C (-65.20°F) to +71°C (159.80°F) (+95°C (203°F) intermittent) passive
Shock, Vibration	MIL-PRF-71 185
Gunfire, Acoustic	MIL-STD-810
Angular Rates and Accelerations	1,000°/sec; 1,500°/sec ² , 13g/sec
MTBF	>20,000 hours
Maintainability	Full Built In Test (BIT); no intermediate maintenance required; no special tooling or test equipment required

Features	
Position	UTM or Geodetic
Heading	True, magnetic (no external reference required), UTM Grid
Velocity	3-axis
Acceleration	3-axis
Attitude	Roll, pitch, yaw; unlimited mounting
Angular Rates and Accelerations	3-axis linear and angular output
RS-422, RS-485, ARINC-429	Standard (multiple digital formats)
HAVE QUICK, Precise Time and Time Interval (PTTI)	Standard
Independent Inertial and GPS Data	Standard; GPS MIL-STD-1553B data per SS-US-200, SSAM
Key Loading	Standard GPS loaders, Data bus (application approval required)

For more information, please contact:

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