NORTHROP GRUMMAN

LCI-100C

Inertial Measurement Unit

Northrop Grumman LITEF is a world leading company with over 45 years of experience in inertial systems technology.

The LCI-100C consists of three Fiber Optic Gyros (FOG), one B-290 accelerometer triad and a processor module. This sensor assembly has been matured in navigation systems.

With the LCI-100C Northrop Grumman LITEF provides an Inertial Sensor Assembly which is not subject to German export restrictions (status quo).

Features:

- Data output fully compensated for temperature and misalignment
- HDLC digital interface, asynchronous UART
- Extensive Built-In-Test features
- Low life cycle costs

Typical Applications:

- Platform and antenna stabilization
- Navigation systems
- Photogrammetry
- Geodesy
- Arial survey

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TECHNICAL DATA

Rate Sensor Parameters	
• Measurement Range	± 495 °/s
• Bias	
- Repeatability (1σ) (Turn-on to Turn-on)	≤ 0.1 °/h
- Instability (Allan Variance, const. Temperature)	≤ 0.05 °/h
- Stability over Temperature Range (1σ)	≤ 0.15 °/h
- Stability(1σ) (1 month)[1)]	≥ 0.5 °/h
• Scale Factor	
- Repeatability (1σ) (Turn-on to Turn-on)	≤ 100 ppm
- Error over Temperature Range (1σ)	≤ 300 ppm
- Non-linearity (1σ)	≤ 100 ppm
• Angle Random Walk (max) (Allan Variance)[1)]	> 0.0035 °/√h ≤ 0.012 °/√h
Accelerometer Parameters	
• Measurement Range	± 10g
• Bias	
- Repeatability (1σ)[1)]	≥ 1250 µg
- Instability (Allan Variance, const. Temperature)	≤ 100 µg
- Stability over Temperature Range (1σ)	≤ 300 µg
- Stability(1σ) (1 year)[1)]	≥ 130 µg
• Scale Factor	
- Repeatability (Turn-on to Turn-on) (1σ)	≤ 100 ppm
- Error over Temperature Range (1σ)	≤ 300 ppm
- Non-linearity (1σ)	≤ 100 ppm
- Stability(1σ) (1 year)[1)]	≥ 130 ppm
• Velocity Random Walk (max) (Allan Variance)	≤ 100 µg /√Hz
System Parameters	
• Mass	≤ 2.5 kg / ≤ 5.5 lb
• Dimensions (excluding mounting flanges and connector)	≤ 100 x 130 x 160 mm, ≤ 3.9 x 5.1 x 6.3 inch
• Volume	≤ 2.6 liters / ≤ 159 inch³
• Supply Voltage	18.0 VDC ≤ 28 VDC nominal ≤ 32.0 VDC
• Power Consumption	max 18 Watt, ≤ 10 W typical
• Interface	serial interface with RS-422 levels, either synchronous with HDLC protocol + SYNC-Pulse or asynchronous (UART) + SYNC-Pulse
• Data Update Rate	50 Hz. . . 1024 Hz
• Built-In-Test	Power Up BIT, Continuous BIT
• System Bandwidth (3 dB)	≥ 400 Hz
• Input Axis Misalignment (max)	≤ 0.5 mrad
• Temperature Range	
- operating:	-40 °C . . . +71 °C
- specified Performance:	-20 °C . . . +71 °C
• Random Vibration (DO-160F Cat. SC)	
- operating:	4.1 grms, 10 Hz . . . 2000 Hz
- specified Performance:	2.0 grms, 10 Hz . . . 2000 Hz
• Shock	6.0 g; 20 ms halfsine (operational)

[1)] adapted to export regulations

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