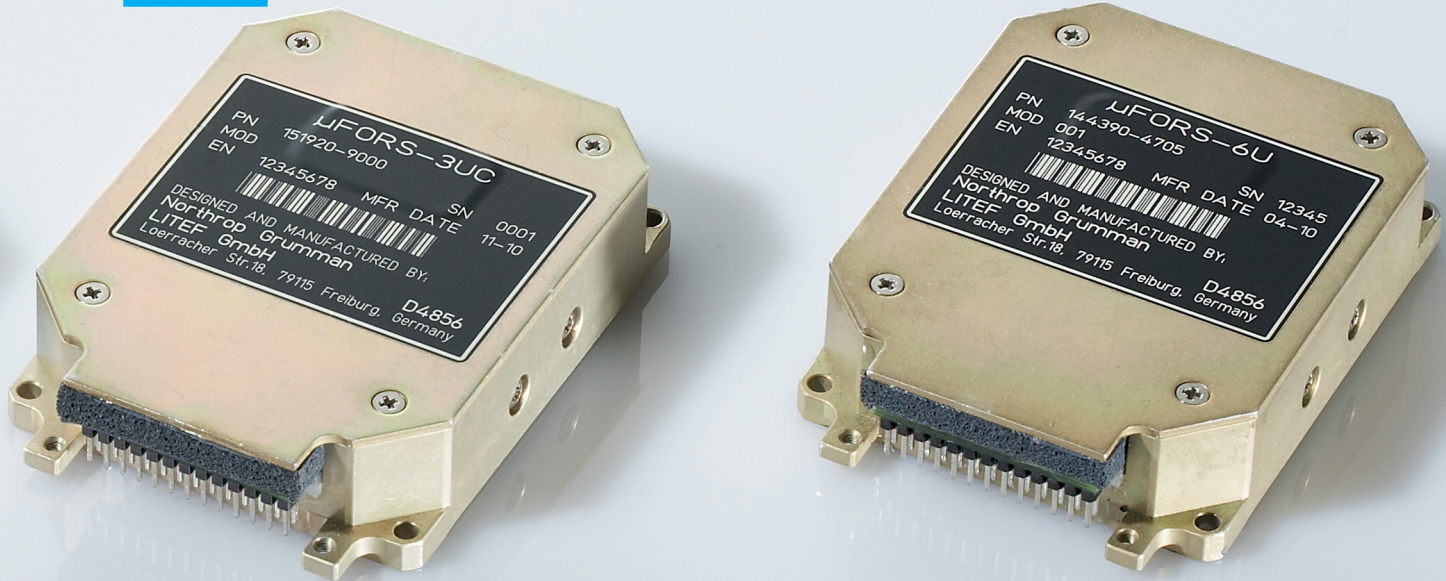


μFORS-3U / -3UC / -6U / -6UC

HIGH PERFORMANCE FIBER OPTIC RATE GYROS



Northrop Grumman LITEF's Fiber Optic Rate Sensor μFORS is designed to meet the requirements of a wide range of air, land and sea applications.

Using the latest technology, it provides compensated angle or angular rate outputs via its digital interface, which can be set to either asynchronous or synchronous operation mode.

With small volume, low weight and small power consumption, the μFORS can be integrated easily. Its configurable measurement range makes it an ideal candidate to standardize system design, thereby reducing system complexity and cost.

Free from effects of gravity induced errors, and with no moving parts, LITEF's μFORS is insensitive to shock and vibration. It offers high reliability without the need for periodic maintenance.

FEATURES

- High Dynamic Range (Closed Loop Sensor)
- High Scale Factor Linearity
- High Performance under High Vibration Levels
- High Performance under Extended Temperature Range
- Temperature Compensated Data Output
- Robust One-Box Solution
- Standard Digital Interface
- Flexible, configurable Interface with multiple Range, Resolution and Measurement Mode options
- Tools available for Flexible Interface Configuration

ADVANTAGES

- Improves System Performance
- Operates in Harsh Environments
- Reduces Integration Complexity
- Reduces Logistic Complexity
- Reduces Weight, Volume, Power, Costs
- LITEF Support during Integration
- Reduces Export Authorization Formalism
- Reduces Risk

TECHNICAL DATA μ FORS-3U / -3UC / -6U / -6UC

HIGH PERFORMANCE FIBER OPTIC RATE GYROS

	μ FORS-3U / -3UC	μ FORS-6U / -6UC
PERFORMANCE		
Range	$\pm 1000 \text{ }^\circ/\text{s} / \pm 499 \text{ }^\circ/\text{s}$	
Scale Factor Error - Repeatability (day to day) - Linearity (full range; at 25 °C)	$\leq 0.2 \text{ } \%$ (1 σ) $\leq 0.02 \text{ } \%$ (1 σ)	
Bias - full temperature range - stability at constant temperature ^(*) - typical value at 25 °C ¹⁾	$\leq 3.0 \text{ }^\circ/\text{h}$ (1 σ) $\leq 1.5 \text{ }^\circ/\text{h}$ (1 σ) $\leq 1.0 \text{ }^\circ/\text{h}$ (1 σ)	$\leq 6.0 \text{ }^\circ/\text{h}$ (1 σ) $\leq 3.0 \text{ }^\circ/\text{h}$ (1 σ)
Noise (Random Walk) ²⁾³⁾ - at const. temperature ^{1)(**)}	$\leq 0.08 \text{ }^\circ/\sqrt{\text{h}}$	$\leq 0.15 \text{ }^\circ/\sqrt{\text{h}}$ $\leq 0.047 \text{ }^\circ/\sqrt{\text{h}}$
Magnetic Sensitivity	$\leq 30 \text{ }^\circ/\text{h} / \text{mT}$ (3 $^\circ/\text{h}/\text{Gauss}$)	
Initialization Time	$\leq 120 \text{ ms}$	
Misalignment	$\pm 5 \text{ mrad max}$	
Bandwidth (3 dB)	3200 Hz	
Update Rate - asynchronous - synchronous	5 ... 1000 Hz 5 ... 8000 Hz	
Latency ⁴⁾ - asynchronous - synchronous	down to 0.7 ms down to 0.2 ms	
MTBF (ground mobile)	$\geq 50,000 \text{ h}$	
ELECTRICAL CHARACTERISTICS		
Power Supply	+ 5 VDC	
Power Consumption	1.1 W max ¹⁾ , 2.3 W max	
Connector	26 Pin Header, 2.54 mm pitch, double row	
Digital Serial Data Interface - asynchronous (RS-422) - synchronous (IBIS, based on CCITT 1431T1/E19)	9,600 Bd ... 375,000 Bd up to 2.048 MHz	
Configurability asynchronous interface only:	Range & Resolution, Mode (Angular Increments, Rate, Accum. Angle) Baudrate, Trigger Mode (HW, SW, Auto), Update Rate	
PHYSICAL CHARACTERISTICS		
Size (H x W x L)	21 x 65 x 88 mm ³	
Weight	$\leq 150 \text{ g}$	
Housing	ruggedized	
ENVIRONMENTAL CONDITIONS		
Temperature - operating - non-operating	- 40 °C ... + 65 °C - 55 °C ... + 85 °C	
Vibration 30 min/axis operating	max 0.1 g ² /Hz, 500 Hz ... 1 kHz	
Shock operating	800 g; 0.5 ms / 250 g; 4 ms / 100 g; 11 ms	

(*) Gyro bias stability is $>0.5 \text{ }^\circ/\text{hr}$ when measured over a constant operating period of one month

(**) Angular Random Walk is $>0.0035 \text{ }^\circ/\sqrt{\text{hr}}$.

¹⁾ typical values: measured at final production acceptance tests

³⁾ independent of update rate, i.e. white noise behavior

²⁾ determined by Allan Variance (typical measured value)

⁴⁾ depending on interface configuration

FOR MORE INFORMATION,

PLEASE CONTACT:

Northrop Grumman LITEF GmbH

Lörracher Strasse 18

79115 Freiburg | Germany

Phone: +49 761 4901-0

info@litef.de | www.litef.com

