

## **μFORS-36m / -1** **Fiber Optic Rate Sensors**

*Designed to meet the requirements of a wide range of air, land and sea applications.*



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 the asynchronous or the synchronous digital IBIS (Intelligent Bus for Inertial Sensors) interface.

With small volume, low weight and small power consumption, the μFORS can be integrated into many applications, thereby reducing system complexity and cost.

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

### **All μFORS provide the advantages of the closed loop principle:**

- High dynamic range
- High scale factor linearity
- Excellent performance under high vibration levels

### **Customer advantages of the μFORS are:**

- Integrated electronics
- Standard digital interface
- Flexible, programmable digital interface (range, data rate, resolution etc.)
- Output of temperature compensated data
- Small size, low weight, low power consumption
- Low cost

# μFORS-36m / -1

## Fiber Optic Rate Sensors

### TECHNICAL DATA

(Standard parameters, other performance on request)

	μFORS-1	μFORS-36m
<b>Performance</b>		
• Range	± 1000 °/s	± 1500 °/s
• Scale Factor Error - Repeatability (day to day)	≤0.05 % (1σ)	≤0.1 % (1σ)
• Bias Repeatability (day to day) - full temperature range - at stabilized temperature	≤1 °/h (1σ) ≤1 °/h (1σ)	≤36 °/h (1σ) ≤18 °/h (1σ)
• Noise (Random Walk)	≤0.1°/√h	≤1°/√h
• Initialization time	≤120 ms	≤120 ms
• Misalignment	±10 mrad max	±10 mrad max
<b>Electrical Characteristics</b>		
• Power Supply	± 5 VDC; +3.3 VDC	± 5 VDC; +3.3 VDC
• Current Consumption	2.5 W max	2.25 W max
• Connector	soldering pins	soldering pins
• Data Interface serial asynchronous or serial synchronous	TTL / CMOS IBIS*	TTL / CMOS IBIS*
• Data Rate asynchronous synchronous	5 ... 1000 Hz (TTL) 5 ... 8000 Hz (IBIS)	5 ... 1000 Hz (TTL) 5 ... 8000 Hz (IBIS)
<b>Physical Characteristics</b>		
• Size (HxWxL)	22 x 53 x 78 mm <sup>3</sup>	21 x 53 x 58 mm <sup>3</sup>
• Weight	≤137 g	≤110 g
• Housing	ruggedized, hermetically sealed	ruggedized, hermetically sealed
<b>Environmental Conditions</b>		
• Temperature (operating)	-40 °C ... +77 °C	-55 °C ... +81 °C
• Vibration 30min/axis operating	max. 0.1 g <sup>2</sup> /Hz, 500 Hz ... 1kHz	max. 0.4 g <sup>2</sup> /Hz, 500 Hz ... 1kHz
• Shock operating	250g; 4 ms	80g; 1 ms

\* based on CCITT 1431T1/E19

For more information,  
please contact:  
**Northrop Grumman LITEF GmbH**  
Marketing and Sales Department  
Loerracher Str. 18  
79115 Freiburg, Germany  
Phone: +49 761 4901-422  
Fax: +49 761 4901-332  
marketing@ng-litef.de  
www.northropgrumman.litef.com

©Northrop Grumman LITEF GmbH, Freiburg, Germany  
All rights reserved.  
Data subject to change without notice.  
September 2011