

µFORS-3U / -3UC / -6U / -6UC HIGH PERFORMANCE FIBER OPTIC RATE GYROS



LITEF's Fiber Optic Rate Sensor μ FORS 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 μ FORS 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 μ FORS 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
- \cdot High Performance under High Vibration Levels
- High Performance under Extended Temperature Range
- Temperature Compensated Data Output
- $\cdot\,$ 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 $\mu\text{FORS-3U}$ / -3UC / -6U / -6UC

HIGH PERFORMANCE FIBER OPTIC RATE GYROS

	µFORS-3U / -3UC	µFORS-6U / -6UC										
PERFORMANCE												
Range	± 1000 °/s /± 499 °/s											
Scale Factor Error - Repeatability (day to day) - Linearity (full range; at 25 °C)	≤ 0.2 % (1 ♂) ≤ 0.02 % (1 ♂)											
Bias - full temperature range - stability at constant temperature ^(*) - typical value at 25 °C ¹⁾	≤ 3.0 °/h (1 σ) ≤ 1.5 °/h (1 σ) ≤ 1.0 °/h (1 σ)	≤ 6.0 °/h (1 ດ) ≤ 3.0 °/h (1 ດ)										
Noise (Random Walk) ^{2) 3)} - at const. temperature ^{1) (**)}	≤ 0.08 °/√h	≤ 0.15 °/√h ≤ 0.047 °/√h										
Magnetic Sensitivity	≤ 30 °/h /	mT (3 °/h/Gauss)										
Initialization Time	≤ 120 ms	3										
Misalignment	± 5 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)	≥ 50,000 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 (IRIS, based on COLTT 1/(3)11/(5)9)	9,600 Bd 375,000 Bd											
Configurability	Range & Resolution, Mode (Angular Increments, Rate, Accum. Angle											
PHYSICAL CHARACTERISTICS												
Size (H x W x L)	21 x 65 x 88	3 mm ³										
Weight	≤ 150 g											
Housing	ruggedized											
ENVIRONMENTAL CONDITIONS	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~											
Temperature - operating - non-operating	- 40 °C + - 55 °C +	65 °C 85 °C										
Vibration 30 min/axis operating	max 0.1 g²/ŀ 500 Hz 1	Hz, kHz										
Shock operating	800 g; 0.5 ms / 250 g; 4 ms / 100 g; 11 ms											

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

(**) Angular Random Walk is >0.0035 °/sqrt(hr).

 $^{1)}{\rm typical}$ values: measured at final production acceptance tests $^{3)}{\rm independent}$ of update rate, i.e. white noise behavior

 $^{\rm 2)}$ determined by Allan Variance (typical measured value) $^{\rm 4)}$ depending on interface configuration

FOR MORE INFORMATION,	L	L.	L.	L	L.	L	L.	L.	L.	L.	L.	L.	L	L.	L	L.	L.	L	L	L	L	L	L	L.	L.	L.	L	L.	L
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