

μFORS-1 / -36m FIBER OPTIC RATE SENSORS



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, LITEF's μFORS is insensitive to shock and vibration. It offers high reliability without the need for periodic maintenance.

ADVANTAGES OF THE CLOSED LOOP PRINCIPLE:

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

CUSTOMER ADVANTAGES OF THE μFORS:

- 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

TECHNICAL DATA μ FORS-1 / -36m

FIBER OPTIC RATE SENSORS

	μ FORS-1	μ FORS-36m
PERFORMANCE		
Range	$\pm 1000 \text{ }^\circ/\text{s}$	$\pm 1500 \text{ }^\circ/\text{s}$
Scale Factor Error - Repeatability (day to day)	$\leq 0.05 \text{ } \%$ (1 σ)	$\leq 0.05 \text{ } \%$ (1 σ)
Bias Repeatability (day to day) - full temperature range - at stabilized temperature	$\leq 1 \text{ }^\circ/\text{h}$ (1 σ) $\leq 1 \text{ }^\circ/\text{h}$ (1 σ)	$\leq 36 \text{ }^\circ/\text{h}$ (1 σ) $\leq 18 \text{ }^\circ/\text{h}$ (1 σ)
Noise (Random Walk)	$\leq 0.1 \text{ }^\circ/\sqrt{\text{h}}$	$\leq 1 \text{ }^\circ/\sqrt{\text{h}}$
Initialization Time	$\leq 120 \text{ ms}$	$\leq 120 \text{ ms}$
Misalignment	$\pm 10 \text{ mrad max}$	$\pm 10 \text{ mrad max}$
ELECTRICAL CHARACTERISTICS		
Power Supply	$\pm 5 \text{ VDC}; + 3.3 \text{ VDC}$	$\pm 5 \text{ VDC}; + 3.3 \text{ VDC}$
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)
PHYSICAL CHARACTERISTICS		
Size (H x W x L)	22 x 53 x 78 mm ³	21 x 53 x 58 mm ³
Weight	$\leq 137 \text{ g}$	$\leq 110 \text{ g}$
Housing	ruggedized, hermetically sealed	ruggedized, hermetically sealed
ENVIRONMENTAL CONDITIONS		
Temperature (operating)	- 40 °C ... + 77 °C	- 55 °C ... + 81 °C
Vibration 30 min/axis operating	max 0.1 g ² /Hz, 500 Hz ... 1 kHz	max 0.4 g ² /Hz, 500 Hz ... 1 kHz
Shock operating	250 g; 4 ms	80 g; 1 ms

*based on CCITT 1431T1/E19

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