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FOG11A FIBER OPTIC SINGLE AXIS GYRO

- **High Stability**
- **Robust and lightweight**
- **Integrated Bessel type low pass filter**
- **Selectable corner frequency**
- **Both unipolar and bipolar output available on the same unit**

FOG11A is a solid state fiber optic angular rate sensor based on Sagnac effect, it comprises a single axis sensing element and electronics in a easy-to-use package.

The sensing element is a fiber optic coil with beam splitter and optical devices. The sensitive axis is perpendicular to the base of the instrument.

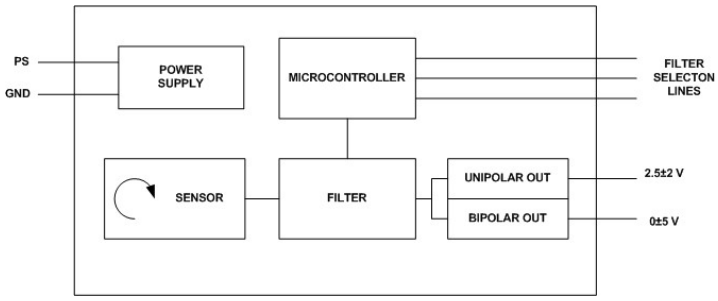
FOG11A provides both unipolar and bipolar output from the same unit, in order to obtain a 2.5V bias @ 0°/s (unipolar output) as well as 0V @ 0°/s (bipolar output) meeting all customer requirements. The main feature which distinguish FOG11A is the built in 5 poles, linear phase, Bessel type low pass filter implemented into the electronic circuitry. This kind of filter avoid any aliasing problem during data acquisition and grants a better S/N ratio in the meantime. Bessel response with linear phase assures low distortion during step change.
Internal temperature signal output is also provided.

The filter corner frequency depends on a microcontroller generated signal, it can be easily selected among eight values: 1000 - 500 - 200 - 100 - 50 - 20 - 10 - 5 Hz.
A quartz generated clock for built in microcontroller gives a uniform response in a multi-sensor system.

Electronic circuits employ SMD technology. The unit is designed to prevent damage resulting from power supply reversal.

Main features:

• Rate range	±100 °/s (others available)
• Scale factor	20 mV/°/s
• Operating voltage	10÷16 Vdc
• Output	2.5±2 V monopolar ±10 V differential ± 5 V bipolar
• Bandwidth	8 values selectable from 5 to 1000 Hz
• Mass	280 g



FOG11A - TECHNICAL SPECIFICATIONS

	Monopolar out	Bipolar out
Rate range	±100°/s	
	+/-50 , 150, 300 °/s available	
Scale factor		
Nominal	20 mV/°/s	50 mV/°/s
Linearity	<0.15% fs typical	
Variation with temperature	< 0.3%	
Bias		
Stability (@20°C)	0.005 °/s	
Over temperature	0.1 °/s	
Repeatability	< 0.1% fs	
Bandwidth	1000 - 500 - 200 - 100 - 50 - 20 - 10 - 5 Hz selectable	
Temperature Output	10 mV/k (2731 mV @ 0°C)	
Environment		
Operating temperature	-30°C to +80°C	
Humidity	5 to 95 RH	
Shock (operational)	200 g (1ms ½ sine)	
Mass	280 g	
Electrical		
Supply voltage	10÷16 Vdc	
Supply current	<150 mA	
General		
Start-up time	< 0.8 s	

Cable colour	Function
red	supply +
black	supply gnd
yellow	bipolar out +
pink	bipolar out -
orange	monopolar out
green	filter A
blue	filter B
violet	filter C
dark brown	filter gnd
white	out GND
gray	N/C
light brown	temperature Out
shield	connected to case

Fc [Hz]	filter A	filter B	filter C
1000	H	H	H
500	L	H	H
200	H	L	H
100	L	L	H
50	H	H	L
20	L	H	L
10	H	L	L
5	L	L	L

The three filter frequency control lines are TTL level compatible with 10kΩ pull up resistor.
H level means an open line or > 2.4 V,
L level means a shorted to gnd or < 0.7 V.