FIBER OPTIC GYRO
8088 000-112

The Fiber Optic Gyro (FOG) is a compact, solid state, single axis rate sensor.

Design
The FOG is composed of two main parts:
· Optical Part
This part is a fiber optic ring interferometer comprising fiber coil, phase modulator, two fused fiber optic couplers, fiber optic polarizer, super luminescent light module and photo receiving module with pre-amplifier.
· Electronic Part
This part is a processing PCB that converts the optical module output into rate proportional voltage.

Operation
A Fiber Optic Gyro is based on the Sagnac effect. The time for light to travel in a coil is dependent of the rotation of the coil. In a ring fiber optic gyro light is divided into two beams entering a fiber coil in opposite directions. After exiting the coil the two beams are combined in a coupler and a phase difference proportional to the rate of rotation is measured.

Applications:
· Gun stabilization
· Missile stabilization
· Inertial measurement units
· Sight stabilization
· Camera stabilization
· Antenna stabilization

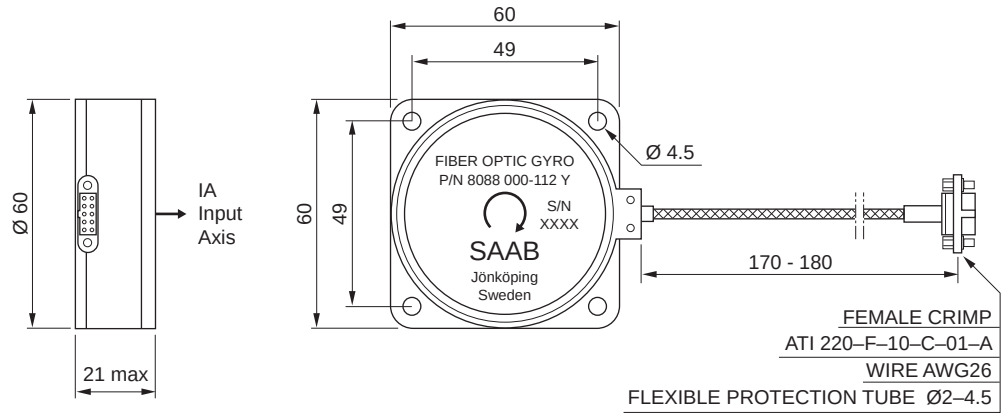
Features:
· Solid state
· Low drift
· High shock survivability
· Small size
· Short start-up time
· Non ITAR

Company Background
Saab has been a producer of gyros of various designs for over 40 years. Production was initially intended for Saab designed aircraft sight and missile requirements.

Since the end of 70´s the gyro production have expanded into a product line of it´s own including design and production of gyro products for worldwide customers. Up to the present time we have produced more than 40.000 sensors. Gyros based on FOG technology has been the main product since the end of 90´s.

Mechanical Gyros.

DIMENSIONAL DRAWING FOG 8088 000-112



SPECIFICATION VERSION 8088 000-112

CHARACTERISTICS	UNIT	VALUE
Range	°/s	±150 *1
Bias Over Temperature Range	°/h max	180
Bias instability (Allan variance)	°/h max	1
Scale factor @±50°/s, differential	mVDC/°/s	65.0
Scale factor error Over Temperature Range	%	±2
Non-linearity ±100°/s, linear regression	%	±1.0
Non-linearity ±150°/s, linear regression	%	±3.0
Start up time	ms max	250
Angle Random Walk	°/√h max	0.05
Bandwidth	Hz min	100
Axis misalignment	mrad max	±8
Voltage, supply I	VDC	+5±0.25
Voltage, supply II	VDC	+10.0 – +15.5 *2
Voltage, supply III	VDC	-10.0 – -15.5 *2
Current, supply I	mA max	200
Current, supply II	mA max	50
Current, supply III	mA max	50
Output load	kΩ	10±1%
Weight	grams max	90
Temperature Sensor Output	mV	f(T)=(Tx10+500)±30
Built In Test Output	VDC_{OK}	0.6 – 1.8
ENVIRONMENTS		
Shock and linear acceleration	g: msec	90:6
Vibration, random	g^2/Hz : Hz	0.09 : 20–2000
Vibration, sine	g: Hz	10 : 20–2000
Operating temperature range	°C	-30 – +70
Storage temperature range	°C	-40 – +75

*1 Also available in 750°/s version
*2 Calibrated at ±15 ±0.25V

Specifications subject to change without notice

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