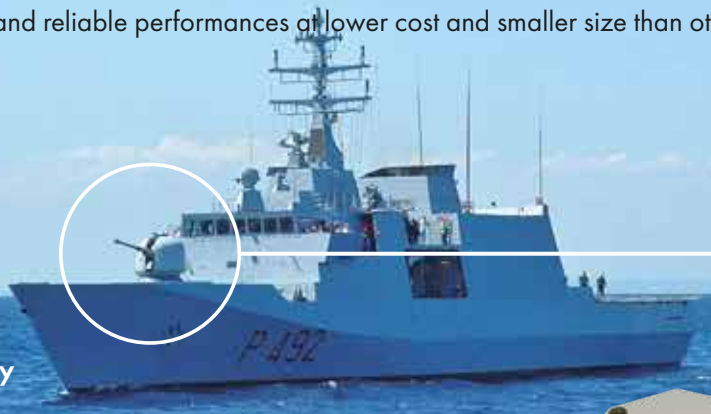
GEM ELETTRONICA
a LEONARDO company

FGU-200

Dual Axis Fiber Optic Stabilizer

The most advanced solution of Two-Axis ultra-accurate Stabilization of complex structures operating in virtually any environmental

The in-house development and design of closed loop Fiber Optic Gyroscopes allows GEM ELETTRONICA to realize a wide range of high performance products in the field of gyro compassing, inertial navigation and stabilization. GEM FOGs delivers high precision and reliable performances at lower cost and smaller size than other comparable gyros.



Applications
- Sea/Undersea/Land/Sky
- Armoured vehicles
- Antenna Stabilization
- Aid to inertial navigation

Performance
- High Accuracy
- Extremely Reliable
- Compact
- Calibration free

GEM FGU-200 is a dual axis gyro system realized with state-of-the-art closed loop Fiber Optic Gyroscopes. The use of those inertial sensors allows for a large number of advantages over competing technologies. FOGs are "solid state sensors" containing no moving parts, that means long, reliable shelf and usage life and amazing values of MTBF (Mean Time Between Failure). Thanks to an accurate manufacturing process and the use of digital closed loop control, GEM FGU-200 gyros show a very low noise, high accuracy and stability, high resolution, wide measure range and bandwidth and low latency. All this in a robust and very compact format.
All those features make GEM FGU-200 suitable for a wide range of high performance applications like motion compensation, EO/FLIR/RADAR stabilization, precision pointing, line-of-sight tracking etc.

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Performance

Measurement range	60°/s, analog output 500°/s, digital output
Transient Range	> 120°/s
Continuous Range	> 100°/s
Scale factor (SF) @ 20°C	6 (°/s)/V ± 0.1% differential output
Minimum detectable speed	10^{-3} °/s
Linearity	0.1% of the range
SF variation versus temperature	< 100 ppm/°C
Static noise (0 - 100 Hz)	Max 72°/h rms
Pass Band (-90°)	min. 100 Hz
Pass Band (-3dB)	min. 100 Hz
Drift Turn on-stability (1s, 0 -1Hz)	3.5°/h
Random drift (1s, 0 -1Hz)	1.8°/h
G-insensitive drift (20°C)	30°/h
In phase G-sensitive drift (20°C)	30°/(h*g)
Quadrature phase G-sensitive drift (20°C)	30°/(h*g)
Drift variation (peak to peak in -40°C +85°C temperature range)	80°/h
Drift variation (-40°C/+60°C) G-sensitive	30°/(h*g)
Drift stability in 3 min	< 1.5°/h
Drift stability in 120 min	< 5.0°/h
Start-up time	< 5 sec

Electrical Interface

Power Supply	18-32 VDC, MIL-STD-1275
Power Absorbation	< 12W
Output impedance	max 50 ohm, each axis
Data Interface	Analog and RS422 (same ground reference)

Environmental conditions

Operating Range of temperature	- 40°C / + 70°C
Storage Range of temperature	- 40°C ÷ 80°C
Shock	Half sine As per Finabel 2.C.10 file 31 – severity 11/500 (500 m/s^2 for 11ms), 4 shock axis (2 at any direction)
Bumps	Operative Half sine, as per Finabel 2.C.10 file32 - 4000 bumps severity 6/400 (400 m/s^2 for 6ms)
Vibration	MIL-STD-810G Method 514.6 Annex C Table 514.6C-VI Level 4
Umidity	STANAG 2895, Method: appedix 4, annex B, table 12 cycle B3. Performances: 1x24h 41°C@59%, 31°C@88%
Rain	MIL-STD-810F, Method 506.4 – Procedure II – 15 minutes.
Fungus	MIL-STD-810F Method 508.5 – 28 days
Dust, Powder	STANAG 2895, annex C, par. 48÷59, table 31. MIL-STD-810F Method 510.4 - Procedure I (blowing dust) e II (blowing sand). Environmental conditions par. 5.1.2, 5.1.3, 5.1.4; B-not protected; 23°C temperature. Duration 6h for powder; 90 min for dust.
Salt fog	MIL-STD-810F Method 509.4; NaCl 5%; temperature 23°C; duration 96h
Finishing	IP65
Sun rays	MIL-STD-810F, Method 505.4, procedure I (cycling), daily rate par 2.3.1, 24h / 3 continuos cycles, standard solar spectral density
EMC/EMI	MIL-STD-461E tests CE102, RE102, CS101, CS114, RS101 and RS103 for weapon
MTBF	100,000 hours

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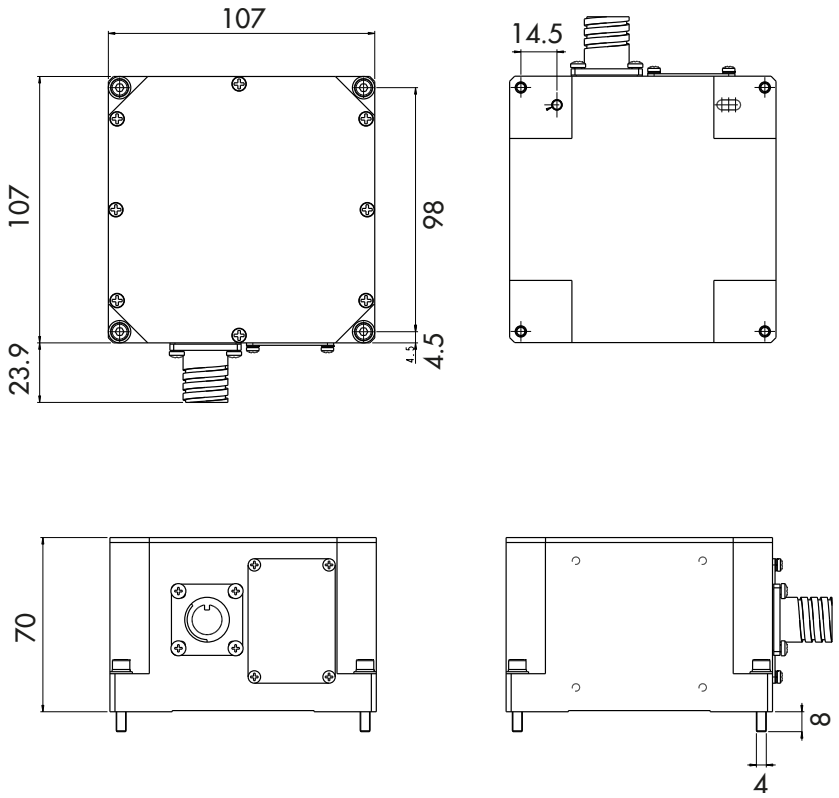

dimensions in mm

Weight: 1.890 Kg.

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marketing@gemrad.com - gemrad.com