GESELLSCHAFT FUER INERTIALE MESS-, AUTOMATISIERUNGS- UND REGELSYSTEME MBH
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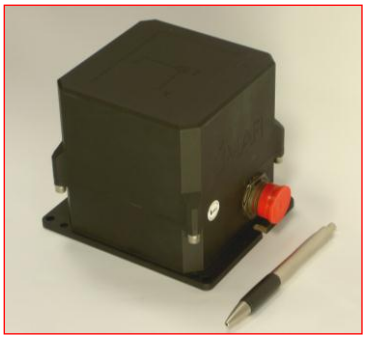
iVRU-FC-IGS

Inertial Gun Stabilisation Unit
with Fiber Optic Gyros and MEMS Accelerometers

With iVRU-FC-IGS a vertical reference unit is provided especially for gun stabilisation tasks.

- Three rate gyros and three accels
- < 0.003 deg/s bias stability
- high shock resistance due to FOG / MEMS technology
- CAN / RS232 / RS422 / HDLC interfaces
- Sync Input / Output available
- Weapon stabilisation tasks
- Navigation and Guidance



iVRU-FC-IGS is a dual axes or three axes system containing rugged fiber optic gyroscopes, as an option up to three MEMS accelerometers and up to three incremental encoders for turret and gun angular feedback and vehicle velocity measurement. The system provides a digital data transmission (CAN, RS232/422). As an option also analog output data can be provided. As a further option an internal GPS / magnetometer can be provided. A platform stabilisation control interface is available on request. Qualification according to MIL-STD-810F and MIL-STD-461E is possible on request (iVRU-FC-IGS-M). The housing can be adapted to customer's requirements (e.g. as replacement of KVH™ systems).

Technical Data of iVRU-FC-IGS for Gun Stabilisation:

	Gyro Performance		Accel Performance
Sensor Range:	± 200 °/s (*)		± 2 / 10 / 30 g
Bias:	< 0.003 °/s	(const. temp., stability)	< 0.1 / 0.3 / 1 mg
	< 0.01 °/s	(OTR, long-term bias)	< 5 / 25 / 75 mg (typ. 0.1% of range)
Resolution:	< 0.001 °/s	(short time stability)	< 0.1 mg
Linearity / Scale error:	< 0.2 % / < 0.2 %		< 0.3 % / < 0.3 %
Noise (0-200 Hz):	< 0.08 °/√h (5 °/h/√Hz)		< 60 / 200 / 1000 µg/√Hz
Bandwidth:	0...200 Hz (option: 300 Hz)		0...200 / 200 / 100 Hz

Attitude / rel.Heading Range:	± 180 ° Roll, ±90 ° Pitch, ±180 ° relative Heading
Attitude Accuracy (absolute):	< 0.3 / 1 / 2.5 ° roll/pitch (static or unaccelerated motion) < 0.05 ° roll/pitch short time stability under dynamics (< 1 mrad / 60 sec)
Track / Heading Accuracy:	depends on aiding options (if any: GPS and/or 3D magnetometer -> 0.2...3 °)
Attitude Resolution:	< 0.01 ° roll/pitch/yaw
Output:	ω_x, ω_y, ω_z , a_x, a_y, a_z (rate and acceleration; option: angular acceleration) Roll, Pitch, delta_Yaw (attitude, rel. heading)
Digital resolution, latency:	> 18 bit ; < 5 ms for angles, < 2.5 ms for angular velocities
Digital Interface:	CAN (up to 1 MBit/s; remote and continuous); **Sync-Trigger-Input/Output;** RS232/422 (up to 115,200 Bd); HDLC on request
Integrated Options:	Standard L1 GPS; odometer interface
Analog Interface (option)	0...5 V or +/- 5V or +/- 10 V (range is factory set; compensated output)
Output Data Rate, Connector:	up to 200 Hz via CAN (400 Hz as an option), MIL-C-38999 III
Temperature, Shock, Vibration:	-40...+71 °C (operating, case temperature), -40...+85 °C storage; 90 g, 6 ms; 10...2000 Hz 6 g rms
Power, Start-up-Time:	11...34 V DC ; approx. 10 W; < 1 sec
Size:	approx. 120 x 120 x 130 mm (depends on features - height up to 160 mm)
Weight, Protection:	approx. 1850 grams / IP68

(*) = other on request (up to 300 °/s; > 1000 °/s possible in special design)

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