

# iIMU-FSAS [-E]

## IMU with Trigger and Integrated Power Regulation

The iIMU-FSAS is a very small size IMU consisting of 3 fiber optical gyros (FOG) in closed-loop technology of class 0.75 deg/hr and 3 servo-accelerometers of class 1 mg.

- < 0.75 deg/hr / 1 mg / 400 Hz
- higher MTBF than RLG systems
- Stabilisation tasks
- INS/GPS navigation
- Surveying applications
- Guidance and Control
- used in many countries / applications worldwide

The IMU is designed for ruggedized applications and is internally equipped with shock absorbers. As an option the unit also can be delivered hard-mounted, i.e. without shock-absorbers. The iIMU-FSAS can be operated on a unregulated wide range input supply voltage and is protected against wrong



polarity and moderate over-voltage. The data output can be triggered and the data are sent via RS422 on an HDLC protocol. As an option the system can be delivered with an additional

integrated AHRS or navigation processor and with odometer interface. All signals are fed via an robust connector of type MIL-C-38999-III.

The iIMU-FSAS is manufactured in Germany and can be used in many commercial and defense applications as a replacement for Litton's LN-200 or Honeywell's HG1700/1900 in surveying applications. Compared to HG1700 the iIMU-FSAS has more than 10 times higher MTBF.

### Technical Data iIMU-FSAS-SI, iIMU-FSAS-EI, iIMU-FSAS-CCI/NCCI [-E: export version]:

	Angular Rate	Acceleration
Sensor Range:	± 450 ‰	± 5 g
Bias:	0.75 deg/hr (1 sigma)	1 mg <sup>1)</sup>
Resolution:	0.1 arcsec / LSB	0.05 / 2 <sup>15</sup> m/s/LSB
Linearity / Scale factor error:	< 0.03 ‰ / 0.03 ‰ (1 sigma)	< 0.1 ‰ / 0.1 ‰ <sup>1)</sup>
Angular random walk:	0.1 ‰√h	< 50 µg√Hz
Output:	3 x angular increment + 3 x velocity increment	
Axis Misalignment:	< 0.1 mrad between all sensor axes	
Digital Interface:	Standard: iIMU-FSAS-SI/-NCCI[-E]: HDLC via RS422, 2 MBit/s Options: iIMU-FSAS-EI-R[-E]: RS232/RS422	
Trigger:	-SI / -EI: data output externally triggered; -CCI / -NCCI: free running output	
Odometer input:	only available on iIMU-FSAS-EI-E: RS422 level, A/B	
Connector:	MIL-C-38999-III, 22 pin ( male), type D38999/24WC35PA	
Data rate:	0...400 Hz (external triggered); gyro bandwidth 250 Hz , accelerometer bandwidth > 50 Hz	
Temperature, Shock, Vibration:	-40...+71 °C (operating, case temperature), -40...+85 °C (storage) 60g/11ms (version -SM), 30g/11ms (version -HM); 20...2000 Hz, 6.3 g rms (endurance)	
Magnetic Insensitivity:	< 0.1 deg/hr / Gauss (< 20 Gauss)	
Environment / MTBF/ MTTR:	IP67 / 30.000 hrs (estimated) / 10 minutes	
Size, Weight:	iIMU-FSAS-SI[-E]: 116 x 128 x 98 mm (plus connector), approx. 1870 grams iIMU-FSAS-EI[-E]: 128 x 128 x 104 mm (plus connector), approx. 2100 grams	
Power, Start-up-Time:	11...34 V DC ; 20 W (max); < 1 sec; reverse-voltage protection Power-On/Off control line available (4...36 V, 8 mAmps)	

iMAR GmbH • Im Reihersbruch 3 • D-66386 St. Ingbert / Germany  
Phone: +49-(0)-6894-9657-0 • Fax: +49-(0)-6894-9657-22  
<http://www.imar-navigation.de> • [sales@imar-navigation.de](mailto:sales@imar-navigation.de)

<sup>1)</sup> The „-E“ version iIMU-FSAS-E (requiring no export license) provides an accel. scale factor of 0.15 ‰ and a bias of 2 mg