iIMU-FSAS-NG-EI-SN-E~

FOG Based IMU with Trigger and Integrated Power Regulation
- special edition for NovAtel's SPAN® applications only -

The iIMU-FSAS of type -NG-EI-SN-E2 is a very small size IMU consisting of 3 fiber optical gyros (FOG) in closed-loop technology of class < 1 deg/hr and 3 servo-accelerometers of class 1.5 mg.

- 0.75 deg/hr / 1.5 mg / 500 Hz
- odometer interface
- same intefaces as successor iIMU-FSAS-E-EI-SN, but 6 mm less height and less power consumption. Option –E2: additionally 12 mm less depth
- used in surveying, navigation, guidance & control on all kind of vehicles (aircrafts, UAV, naval, agriculture, defense etc.)
- ITAR free, no export control

The IMU comes with an interface for direct RS422 UART communication. It is designed for ruggedized navigation and surveying applications. The inertial sensors inside the iIMU-FSAS are hard-mounted, i.e. no shock-absorbers will disturb the high angular performance. The iIMU-FSAS can be operated on a unregulated wide range input supply voltage and is protected against wrong polarity. The data output can be triggered and the data are sent via a serial protocol. All signals are fed via an robust connector of type MIL-C-38999-III.

The iIMU-FSAS is manufactured in Germany.

The iIMU-FSAS-NG-EI-SN-Ex is the successor of the iIMU-FSAS-E-EI-SN with same performance and interfaces, but also available in a smaller package (-E2) as option!

The iIMU-FSAS-NG is affected neither by ITAR regulations nor by any export control.

Note: With iIMU-FSAS-HP also an advanced IMU with 10 times better gyro bias and gyro ARW is available (same mechanical flange, electrical and communication interfaces!).

Technical Data of iIMU-FSAS-NG-EI-SN (1 sigma):

	Angular Rate		Acceleration
Sensor Range:	± 450 °/s		± 5 g (20 g on request)
Bias:	0.75 deg/hr	(1 sigma)	< 1.5 mg
Bias Stability (AllanVariance):	< 0.1 deg/hr	(constant temperature)	< 10 µg
Resolution:	0.1 arcsec / LSB		0.05 / 2^{15} m/s/LSB
Linearity / Scale error:	< 0.03 % / 0.03 %		< 0.04 % / 0.1 %
Angular random walk:	0.15 °/$\sqrt{h}$		< 50 µg/$\sqrt{Hz}$

Output:	3 x angular increments + 3 x velocity increments, odometer support
Axis Misalignment:	< 0.15 mrad between all sensor axes
Digital Interface:	RS422 (UART)
Odometer input:	A/B counter input, RS422 level
Connector:	MIL-C-38999-III, 22 pin (male), type D38999/24WC35PA
Data rate:	0...500 Hz; gyro bandwidth 250 Hz
First data after Power-On:	5 sec default (allows to configure the system within the first 5 sec); can be adjusted by parameter
Temperature, Shock, Vibration:	-40...+71 °C (operating, case temperature), -40...+85 °C (storage) 30 g, 11 ms; 10...2'000 Hz 6.3 g rms (endurance)
Magnetic Insensitivity:	< 0.1 deg/hr / Gauss (< 20 Gauss)
Environment / MTBF/ MTTR:	IP67 / 35.000 hrs (estimated) / 10 minutes
Size, Weight:	iIMU-FSAS-NG-EI-SN-E1: **116** x 128 x 98 mm (plus connector), approx. 1'780 grams iIMU-FSAS-NG-EI-SN-E2: 128 x 128 x 98 mm (plus connector), approx. 1'840 grams
Power, Start-up-Time:	10...34 V DC ; 16 W (max); < 1 sec; reverse-voltage protection
Option (typ, size, power, weight):	iIMU-FSAS-**HP**-SN with only 0.1 deg/hr drift and 0.01 °/$\sqrt{h}$ angular random walk. 128 x 128 x 110 mm (plus connector), < 25 W, approx. 2'800 grams

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

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