GESELLSCHAFT FÜR INERTIALE MESS-,
AUTOMATISIERUNGS- UND REGELSYSTEME MBH
WWW.IMAR-NAVIGATION.DE

iNAV-FJI

Inertial Navigation and Surveying System with Fiber Optical Gyros and Servo Accelerometers

iNAV-FJI is an INS product family for inertial navigation and dynamically motion analysis with advanced fber optical gyros that covers applications which require high accuracy, reliability and an open interface to the user. iNAV-FJI consists of three high performance fiber optical gyroscopes, three servo accelerometers and a powerful strapdown processor.

As an option the modular designed system provides interfaces to (D)GPS, up to 3 odometers, external triggers and analog inputs. Possible outputs are Ethernet, RS232/422, SDLC/HDLC, CAN, ARINC429 or analog as well as internal data storage on hard-disk or on silicon-disk. Furthermore application specific interfaces can be realized on request. The systems can be delivered alternatively with and without internal shock mounts. Special adaptation of housing and mechanical dimensions to customer's requirements is possible. Data processing (strapdown algorithms, global or local navigation, north-seeking or motion monitoring and control) inside of the measuring system is as well possible as data transmission of pure or corrected raw data.

Technical Data, all 1 sigma (NAV-FJI-001 / NAV-FJI-0025):

Range:	± 500 / 750 deg/s	±10 g (other as option)
Drift stability / Offset:	< 0.003 / 0.005 deg/h (const temp.) < 0.01 / 0.05 deg/h (OTR)	< 5 µg (const. temp.) < 60 µg (OTR)
Random Walk:	0.001 / 0.0025 deg/$\sqrt{h}$	< 8 µg/$\sqrt{Hz}$
Resolution:	< 0.1 / 1 µrad (0.02/0.2 "), < 0.001 deg/s	< 1 µg
Nonlinearity / Scalef.:	< 10 / 5 ppm (30 ppm scale factor error)	< 20 µg/g² (<100] ppm)
Data rate:	1...1000 Hz	
True Heading:	< 0.05 / 0.25 deg sec(lat) (depends on longitude and environment)	
Attitude accuracy:	< 0.01 / 0.025 deg	
Position accuracy:	< 15 m (with GPS, temporary gaps allowed), < 1 m with DGPS < 0.1 % distance travelled (with odometer and GPS) < 5 [25] m/hr (free inertial with ZUPT all 4/10 minutes)	
Output:	RS232/422, Ethernet TCP/IP / UDP, CAN, high speed output for stabilisation or custom specific; MIL-C-38999-III connectors	
Inputs:	(D)GPS, up to 3 counter for odometer (A/B), DVL, APS, event trigger	
Synchronization:	Input for PPS and/or Marker (if available)	
Power:	10...34 V DC or 36...70 V DC or other; 35 W	
Temperature:	-5...+50 / -40...+65 °C operating, -40...+85 °C storage (or degraded perform.)	
Rel. Humidity, Shock:	8...100 %, IP67; 25 g, 11 ms or 90 g, 11 ms (depends on shock mounts)	
Weight:	approx. 12 kg (depends on housing; light weight version on request: 6.5 kg)	
Size:	approx. 370 x 213 x 180 mm (other on request)	

Applications with iNAV-FJI are e.g. railway surveying (INS/GPS), mining applications, high accurate motion detection and stabilization of SAR antennas, AUV/ROV guidance and surveying / land navigation. Systems of iNAV-FJI with reduced accel. performance are available on request and only require an European export license.

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