

iNAV-FMS-E

Inertial Measurement System with Fiber Optical Gyros

iMAR's inertial measurement system iNAV-FMS for inertial control, stabilization, guidance, tracking and dynamic analysis is equipped with high precision multiplexed fiber optical gyros and servo-accelerometers and covers applications like navigation, guidance, stabilization or dynamic control, which require high accuracy, bandwidth, reliability and an open interface.

As an option the system provides interfaces for speed measurement (counter input), external marker and trigger. Possible outputs are RS232/RS422, CAN, Ethernet or/and analog output (other on request). Furthermore for evaluation tasks an internal data storage on hard-disk or on silicon-disk is available as an option. Special adaptation of housing and mechanical dimensions is possible. Data processing (strap-



down algorithms, attitude and heading calculation, dead-reckoning navigation, coarse north-seeking, in-flight-slave-alignment or motion monitoring and control) inside of the measuring system is as well possible as data transmission of pure or corrected raw data.

The system can be operated from a PC under Windows™ using iMAR's NavCommand software or as a stand-alone device. Furthermore an open user-interface is available using iMAR's XIO standard so the user can operate the system from his own environment.

Features like "virtual measurement point" are standard, an odometer input is available as an option. Sampling rate and bandwidth of iNAV-FMS are much higher than in competitive IMUs.

The iNAV-FMS-E is manufactured in Germany.

Typical Technical Data of iNAV-FMS-E (-AIRSURV, -LSURV):

Range:	± 450 deg/s	± 5 g
Bias Stability:	0.75 deg/h (1σ)	2 mg (1σ , over temperature range)
Random Walk:	< 0.1 deg/ \sqrt{h}	< 50 μ g/ \sqrt{Hz}
Resolution:	< 0.003 deg, < 0.001 deg/s	< 50 μ g
Linearity error:	0.03% (1σ)	< 0.1 % (1σ)
Angular Accuracy:	< 0.15 deg (Roll/Pitch, with velocity aiding) < 0.2 deg Heading (with temporary GPS-aiding) < 1 deg/h Heading drift (without GPS aiding)	
Shorttime stability:	0.01 deg (roll, pitch, yaw) over 30 sec	
Data rate:	1...400 Hz	
GPS receiver:	default L1 GPS inside, optional L1/L2 external GPS/GLONASS receiver	
Initial Alignment:	using the internal GPS receiver	
Output (options):	RS232, RS422, Ethernet, CAN, analog, ARINC 429, rudder control...	
Inputs (options):	(D)GPS, counter for odometer (A/B), 3D-Magnetometer, EM-Log, DVL, RTK-GPS, compass, analog input channels, event trigger	
Sync. Reference:	Input or output for PPS, output of PPT	
Power:	10...34 V DC option: internal power conditioning according to MIL-STD 461 C and transient protection according to MIL-STD 704A/D/E and DO-160C	
Temperature:	-30...+63 °C (operating within specification; option: -40...71 °C)	
Rel. Humidity:	8...100 %, IP67	
Shock, Vibration:	60 g, 11 ms (depends on shock mounts), 5 g rms (20...2000 Hz)	
Weight, Size:	6.5 kg ; 265 x 145 x 132 mm or customer specific	

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