FOG INERTIAL NAVIGATION SYSTEM

POLYNAV 2000F/F1

The Polynav 2000 F /F1 is an Ultra high-performance, GNSS aided Inertial Navigation System (INS) designed and built by PolyExplore Inc.
The system features dual frequency RTK with a centimeter-level accuracy, a fiber optics gyro (FOG) based inertial sensor and a compact, robust design. The Polynav 2000 provides superior performance during GNSS signal outages through its tightly coupled GNSS and INS systems. Furthermore, the system is capable of continuously generating highly accurate attitude measurements regardless of whether the platform is moving or static. Also included is a digital quadrature counter, an odometer, which can be used as a distance measurement indicator (DMI) to improve the performance in challenging environments. A Heave message for Marine applications also included.

FEATURES

High accurate position, velocity, acceleration, attitude (Roll, pitch, heading), heave and angular rate
GPS, GLONASS, Beidou, Galileo and SBAS
Dual frequency (L1 & L2) RTK
Dual Antenna for accurate heading
100 Hz navigation solution and raw measurement output
Accurate attitude/heading whether the platform is static or moving
Fiber Optic Gyroscope (FOG)
Multiple sensor fusion
ROS driver ready
Heave message

BENEFITS

NETWORK BASED RTK

FOG IMU

MULTI I/O INTERFACE

RUGGED

POLYEXPLORE

Visit polyexplore.com For More Information.

High End, Cost-Effective Navigation Solutions.

PolyExplore Inc.

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contact@polyexplore.com

REV. 4.00

TECHNICAL DATA

FOG INERTIAL NAVIGATION SYSTEM
POLYNAV 2000F/F1

POLYNAV 2000F CHARACTERISTICS

Constellation	GPS/GLONASS/Beidou/Galileo
Satellite signals	L1 & L2
Position accuracy	1.6 m CEP SPS 0.02 m RTK
Velocity accuracy	1 cm/s
Roll/Pitch	0.005°
Heading	0.01° (5 m base)
(RMS)	0.08° per 1 meter of baseline length
Measurement rate	100 Hz
Sensitivity	-160dBm
Number of antennas	2
Inputs/comm	Ethernet, CAN, 2 Serial Ports, Odometer

GNSS SENSOR PERFORMANCE

Time to First Fix (TTFF):
Cold start: < 60 seconds
Warm Start: < 45 seconds
Hot Start: < 11 seconds
Signal re-acquisition: < 2 seconds
Velocity Accuracy: 0.02 m/sec HRMS

Precise Positioning Performance (RTK fixed solution)
Accuracy (HRMS): < 8 mm + 1 ppm
Initialization time: < 1 min typical
Operating range: < 40 km

POLYNAV 2000F INERTIAL SENSORS

Type	Gyros		Accelerometers	
	Polynav 2000F	Polynav 2000F1	Polynav 2000F	Polynav 2000F1
Dynamic Range	490°/s	490°/s	10g	10g
Bias Instability	0.1 °/h	0.05 °/h	0.1mg	0.01mg
Bias Repeatability	5°/h	2°/h	5mg	0.4mg
Random Walk	0.017°/√h	0.012°/√h	0.07m/s/√h	0.014m/s/√h

HARDWARE

Mechanical:
Dimension: 177 x 115 x 109 mm
Weight: 1455 g (without antennas)
Dual antennas and cables are included

Electrical:
Input voltage: 12–28 V DC
Power consumption:10 W
Operating temperature: -40° to 85° C

Environmental:
Operating temperature: -40° to 65° C
Shock: Operating, 9 g, 11 msec, sawtooth
Vibration: Operating 8 g rms, 20-2000 Hz random

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