

NAUTILUS

Naval Inertial Navigation Family



INS/GNSS

Navigation and Stabilization System

The NAUTILUS FAMILY

The NAUTILUS family of strapdown Fiber Optic Gyro (FOG) Naval Inertial Navigation Systems (INS) is designed for performance scalability up to high-grade position accuracy and long endurance missions.

The proprietary ITAR-free FOG-based sensor technology coupled with advanced state estimation techniques based on Kalman Filter algorithm, provides the best-value solution for Gyrocompass, AHRS (Attitude Heading Reference Systems) and Positioning in an all-in-one maintenance-free product, compact, light and reliable.

Specifically aimed at maritime navigation, NAUTILUS family is engineered to guarantee performance in severe environments, both with or without GNSS and Speed Log aiding, and to allow flexible and easy integration in retrofit programs and in new vessels' installations.



CHARACTERISTICS	NAUTILUS 5000	NAUTILUS 4000	NAUTILUS 3000	NAUTILUS 2000	NAUTILUS 1000
Heading (RMS)	$\leq 0.02^\circ$ Sec LAT	$\leq 0.05^\circ$ Sec LAT	$\leq 0.05^\circ$ Sec LAT	$\leq 0.1^\circ$ Sec LAT	$\leq 0.3^\circ$ Sec LAT
Roll / Pitch (RMS)	$\leq 0.01^\circ$	$\leq 0.01^\circ$	$\leq 0.01^\circ$	$\leq 0.02^\circ$	$\leq 0.1^\circ$
Heave (RMS)	≤ 2.5 cm or 2.5%	≤ 2.5 cm or 2.5%	≤ 5 cm or 5%	≤ 5 cm or 5%	≤ 20 cm or 20%
Position (CEP50)	≤ 0.8 NM/24h (Log aided)	≤ 2 NM/8hr	≤ 1 NM/2hr	≤ 4 NM/hr	≤ 10 NM/hr
Alignment time (data availability)	10 minutes	10 minutes	10 minutes	10 minutes	10 minutes
Alignment time (full accuracy)	30 minutes	30 minutes	30 minutes	30 minutes	30 minutes
Embedded GNSS Receiver	Optional	Optional	Optional	Optional	Optional
Waterproofness	IP66	IP66	IP66	IP66	IP66
Dimensions (WxHxD)	192x178x296	151x161x286	151x161x286	151x161x286	151x161x286
Weight	< 12 Kg	< 9 Kg	< 9 Kg	< 9 Kg	< 9 Kg
Power requirements	18-36 VDC (< 20 W)	18-36 VDC (< 18 W)	18-36 VDC (< 18 W)	18-36 VDC (< 18 W)	18-36 VDC (< 18 W)
Operating Temperature	0°C to +55°C (MIL-STD-810F)	-20°C to +55°C (MIL-STD-810G)	-20°C to +55°C (MIL-STD-810G)	-20°C to +55°C (MIL-STD-810G)	-20°C to +55°C (MIL-STD-810G)
Storage Temperature	-40°C to +71°C (MIL-STD-810F)	-40°C to +80°C (MIL-STD-810G)	-40°C to +80°C (MIL-STD-810G)	-40°C to +80°C (MIL-STD-810G)	-40°C to +80°C (MIL-STD-810G)
MTBF	>45000 hours	>45000 hours	>45000 hours	>45000 hours	>45000 hours
Interfaces	RS422/RS232 Ethernet PPS Data Output rate: up to 100 HZ Input/Output Standards: Binary NMEA0183				