Marins M1

The most compact military grade naval Inertial Navigation System



The Marins M1 is an all-in-one product for diverse challenging applications. It is part of our Marins Series range which raises the industry standard and provides accurate heading, roll, pitch, speed and position, included in GNSS-denied environments. Marins M1 is built on Exail's trusted and unique ultimate-performance Fiber Optic Gyroscope (FOG) technology with thousands of units manufactured.

FEATURES

- Strapdown solid-state silent system
- High baud rate / low latency
- Proven with combat and weapon systems
- Resilient to GNSS outages thanks to FOG technology
- MIL STD qualified: 810/461
- Ethernet, web-based GUI compatible
- IMO and IMO-HSC certification
- Free of ITAR component
- NTP synchro capability
- Static and dynamic alignment
- Cybersecured

BENEFITS

- Highly accurate real-time output even in GPS/GNSS denied environment
- Maintenance free
- Unrivalled reliability (sensor core MTBF 500,000 hours)
- Ease-of-use and integration
- Robust heading performance for high-speed vessel with high rate-of-turn
- 24/7 worldwide technical assistance

APPLICATIONS

- Fast craft
- RHIB
- Autonomous vessel (USV and UUV)
- Surface combatant
- Special forces operations
- Safe and reliable navigation
- Missile and fire alignment

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TECHNICAL SPECIFICATIONS

Performances

Endurance position accuracy [1] No aiding	1 nm/ 3h
Velocity accuracy [2] No aiding	0.6 knot
Heading accuracy [2] [3]	0.01° seclat (with GNSS)
Roll/pitch accuracy	0.01 deg RMS
Delayed heave	2 cm or 2% (whichever is greater)

Operating range / Environment

Acceleration dynamic range	±15 g
Operating / storage temperature	-15°C to +55°C / -40°C to +80°C
Heading / roll / pitch	0 to +360 deg / ±180 deg / ±90 deg
Environmental qualification[4]	MIL STD 810 H / 461 G / 167
Waterproof	IP66 & IP67
MTBF (operational)	150,000 hours 500,000 hours (sensor core)

Physical characteristics

Dimensions (L x W x H)	222.3 x 136 x 138.5 mm
Weight in air	4.5 Kg
Material	Aluminum

Interfaces

User interface	Web based graphical user interface
Serial RS232 / RS422 port	6 outputs / 4 inputs
Latency	2.35 ms
Ethernet port [5]	UDP / TCP client / TCP server
Pulse port	PPS input for < 100µs time synchronization
Input / output formats	Industry standards: NMEA0183, ASCII, BINARY
Data output rate	0.1 Hz to 200 Hz
Power supply	24 VDC
Power consumption [6]	13 W

(1) TRMS
(2) RMS values
(3) Secant latitude = 1 / cosine latitude
(4) With dedicated shockmount
(5) All input /output serial ports can be duplicated on ethernet ports
(6) Typical value @24 V and ambient temperature

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EMEA +33 4 94 08 90 00 | APAC +65 6747 4912 | Product subject to arm export regulations