



## Polaris M-10

### GNSS-AIDED MEMS INERTIAL NAVIGATION SYSTEM



Polaris M-10 is the GEM elettronica MEMS based GNSS / INS integrated system specifically developed for marine navigation.

With GEM elettronica innovative sensor fusion algorithm, M-10 provides accurate heading, velocity and position in high dynamic condition.

M-10 provides real time robust navigation measurement with a data update rate up to 20 Hz. Due to its I/O ports, it can be easily integrate with any external sensors.

Integrating an advanced GNSS module with MEMS technology, M-10 provides a significant position and velocity result if compared to a standard GNSS solution.

#### FEATURES

- Compact and versatile
- Calibrated MEMS sensors
- GNSS / INS integrated solution
- Multi-GNSS receiver embedded
- Positioning data with limited GNSS visibility
- Fast real-time navigation data in highly dynamic environments
- Extended navigation filter based on advanced data fusion



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### PERFORMANCES

Heading dynamic accuracy ( $1\sigma$ ) <  $1^\circ$

Position accuracy (CEP) < 2.5m  
< 2m (SBAS)

Velocity accuracy ( $1\sigma$ ) < 0.1 m/s

Pitch & Roll static accuracy ( $1\sigma$ ) <  $0.2^\circ$

Pitch & Roll dynamic acc. ( $1\sigma$ ) <  $0.4^\circ$

Time to first position fix 25 s (Cold start),  
1 s (hot start)

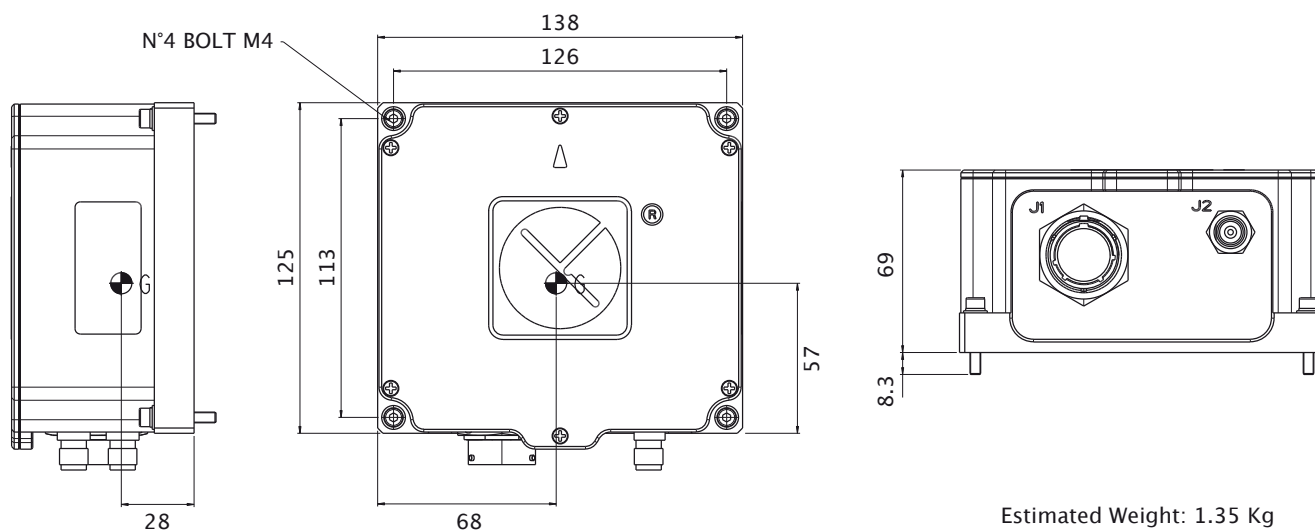
Time to first heading fix 30 s (Coarse magnetic alignment),  
300 s (Fine alignment) after GPS fix

Dynamic Range Acceleration +/- 10g,  
gyro +/-  $300^\circ/\text{sec}$

I/O 3 serial ports RS422,  
1 TNC input for GPS antenna

Power Supply 9-36 V

Operative Temperature  $-10^\circ\text{C} \div 55^\circ\text{C}$



Surveillance & Security

Guidance, Navigation & Positioning

Military & Defence

Marine Electronics

This brochure should not be considered a contractual offer. The specifications given herein may be changed by the manufacturer, GEM elettronica S.r.l., without notice.

