



Sublocus is an underwater inertial navigation system that provides accurate position, velocity and orientation at depths of up to 3000 metres.

It features high accuracy north seeking fibre optic gyroscopes, accelerometers, an internal GNSS receiver and a pressure depth sensor. It accepts external aiding from speed logs, propeller speeds, DVLs, USBLs, SBLs and LBLs.



PERFORMANCE

0.01 ° Roll and Pitch

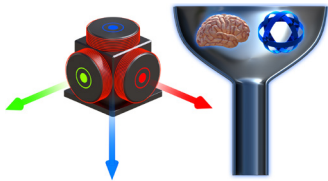
5 % or 50 mm Heave

0.08 % of Distance Travelled

0.25 ° Heading

0.4 m Depth Accuracy

FEATURES



HIGH ACCURACY

Sublocus features very high performance inertial sensors combined with Advanced Navigation's revolutionary fusion algorithms. This allows it to

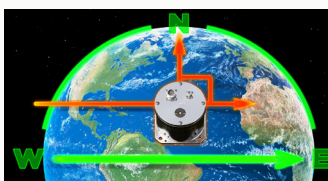
provide highly accurate position, velocity, roll, pitch and heading. Sublocus can provide underwater position accuracy of 0.08% distance travelled.



FULLY INTEGRATED

Sublocus is a fully integrated navigation system and features both a pressure depth sensor and GPS receiver built in. It is supplied with a 6000 metre depth rated

GPS antenna. The GPS receiver provides accurate pre-dive starting position without the hassles of surveying and manual entry.



RAPID NORTH SEEKING GYROCOMPASS

Sublocus features an extremely fast north seeking algorithm that is able to provide accurate heading in as little as 10 seconds

after power on from a hot start and 10 minutes from a cold start. Sublocus's north seeking algorithm runs continuously while in operation and is not effected by velocities or angular movements.



RELIABILITY

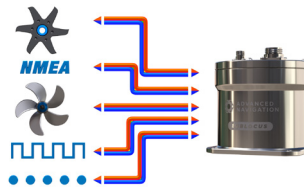
Sublocus has been designed from the ground up for mission critical control applications where reliability is very important. It's

software is built on top of a safety oriented real time operating system and it is designed and tested to safety standards with fault tolerance in place. The electronics are isolated and protected from reverse polarity, overvoltage, surges, static and short circuits on all external interfaces.



LOW MAINTENANCE

Sublocus's enclosure is machined from a single block of high grade titanium and it has only one triple sealed joint. It is polished to make it resistant to biofouling. Sublocus uses FOG technology which means there are no moving parts.



PERIPHERALS

Sublocus has support for a wide range of peripheral inputs including speed logs, propeller speeds, DVLs, USBLs, SBLs and LBLs. If Sublocus doesn't support the peripheral device you have, we will add support for it free of charge.

SPECIFICATIONS

NAVIGATION

Position Accuracy (with GPS)	0.8 m
Position Accuracy (with DVL)	0.08 % of distance travelled
Position Accuracy (with Log)	0.4% of distance travelled
Depth Accuracy	0.4 m
Roll & Pitch Accuracy	0.01 °
Heading Accuracy	0.25 ° secant latitude
Heave Accuracy (whichever is greater)	5 % or 0.05 m
Attitude Range	Unlimited
Hot Start Time	2 s
North Seeking Time	< 60 s
Internal Filter Rate	1000 Hz
Output Data Rate	Up to 1000 Hz

COMMUNICATION

Interface	RS232 or RS422
Speed	4800 to 10M baud
Protocol	AN Packet Protocol, NMEA or TSS
Peripheral Interface	2x GPIO and 1x Auxiliary RS232
GPIO Level	5 V or RS232
GPIO Functions	DVL Input SBL Input USBL Input LBL Input Log Input Odometer Stationary NMEA input/output AN Packet Protocol input/output Packet Trigger Input TSS Output Simrad 1000 Output Simrad 3000 Output Custom inputs/outputs as required

SENSORS

Pressure Sensor Range	4000 m
Pressure Sensor Accuracy	0.4 m
Acceleration	± 10 g
Angular Velocity	± 490 °/s
Gyroscope Technology	FOG
Bias Instability	0.05 °/h

HARDWARE

Depth Rating	3000 m
Operating Voltage	18 to 50 V
Input Protection	-40 to 100 V
Power Consumption (typical)	6 W
Hot Start Battery Capacity	> 24 hrs
Hot Start Battery Charge Time	30 mins
Hot Start Battery Endurance	> 10 years
Operating Temperature	-40 °C to 75 °C
Storage Temperature	-40 °C to 75 °C
MTBF	> 50,000 hrs
Shock Limit	25 g
Dimensions	138 x 138 x 131 mm
Weight in Air	5.8 kg
Weight in Water	3.9 kg