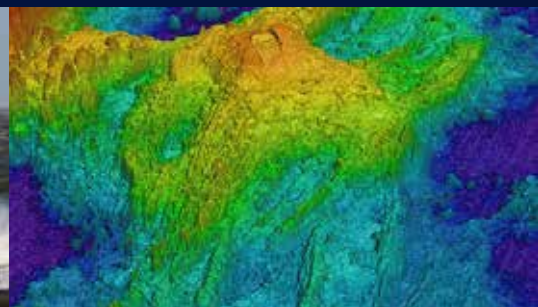


Ekinox Subsea Series

Motion Sensing & Subsea Navigation MRU & INS



EKINOX SERIES R&D specialists usually compromise between high accuracy and price. The Ekinox Series has been designed to bring robust and cost-effective MEMS solutions to the FOG technology's level of accuracy. Ekinox Series opens a new world of opportunities.



The Latest Technology for Cost-effective MRU/INS

The state-of-the-art Ekinox Subsea Series integrates the latest MEMS sensors to offer robust, small-sized, low-power consumption, and cost-effective Motion Reference Unit (Ekinox-M) and Inertial Navigation System (Ekinox-U).

	Ekinox-M	Ekinox-U
Roll, Pitch	●	●
Heading	●	●
Heave	●	●
Navigation		●

OPTION: Depth Rating 200 m / 6,000 m



Industry Standard Connector

200 Hz Output rate (NMEA, TSS1, etc)

3 Serial Outputs Ethernet

8 GB Data Logger

3 axis Tactical Grade:
» Accelerometers,
» Gyroscopes,
» and Magnetometers

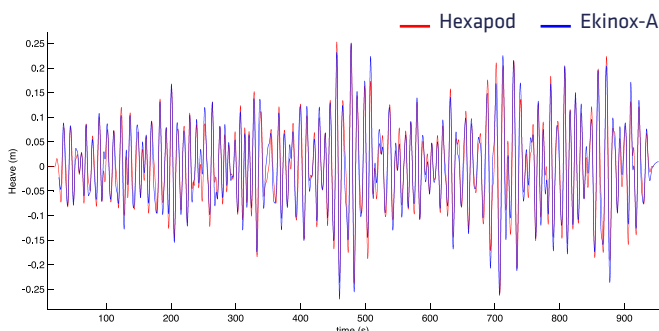
High Performance

- » 0.05° Roll, Pitch, Heading (GPS)
- » 5 cm Real Time Auto-adjusting Heave
- » 2.5 cm Delayed Heave (< 50 sec wave period)

- » Navigation with GPS and DVL
- » Compliant with IHO Standard
- » ITAR Free

Highly Accurate & Consistent Heave

REAL-TIME HEAVE TEST RESULT



Tested on a highly accurate hexapod simulating sea conditions, Ekinox real-time heave accuracy has been confirmed beyond specifications, as 2.3 cm.

*Test conducted at the IFREMER Institute (France).
Full test available on SBG Systems website.*

ADVANCED REAL TIME HEAVE

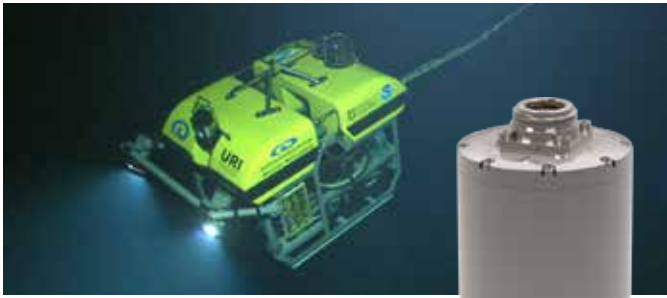
No need to enter wave frequencies, Ekinox adjusts to the sea state to compute the best heave data and deliver it on up to four different locations.

HIGH ACCURACY DELAYED HEAVE

The delayed heave runs an internal zero phase filter which passes over the recorded heave data to increase its accuracy (< 2.5 cm). It is especially relevant in cases of long period swell, where real-time heave reaches its limits.

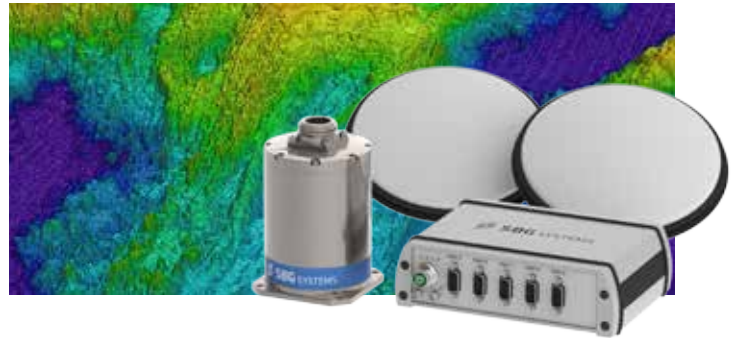


Designed to Meet Marine Technical Needs



HIGH PERFORMANCE INS FOR SUBSEA NAVIGATION

Designed for underwater navigation, the Ekinox Subsea Series is made of titanium and operational up to 6,000 m. The embedded Extended Kalman Filter fuses in real-time inertial data with aiding information (DVL, Depth sensors, etc.) for consistent subsea navigation.



READY-TO-USE PACKAGE FOR HYDROGRAPHY

This recommended package includes a 200 m depth Ekinox-U (INS) with a 10 meters cable, and a SplitBox. The SplitBox allows easy connection with your GPS and various other equipment (compliant with all standard connectors). In option, the SplitBox integrates a tri-band GNSS receiver with two antennas, and accepts differential corrections such as RTK, TerraStar, Marinestar, etc.

Long-term reliability

- » Long life Titanium enclosure
- » 2 years warranty
- » Solid State Sensors, Maintenance Free



Software

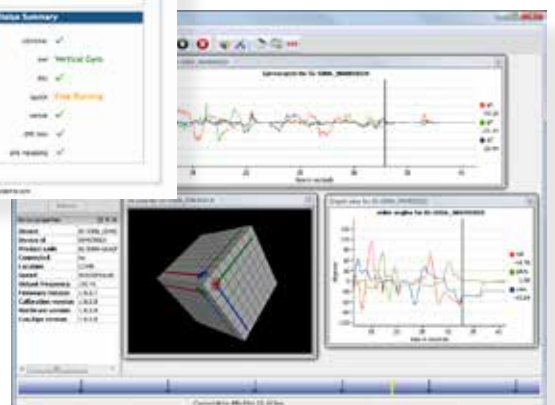
Configuration is made easy through our intuitive embedded web interface where all parameters can be quickly displayed and adjusted.

The sbgCenter offers all the tools for realtime visualization (200 Hz) and replay of the records stored in the internal data logger.



Embedded
Web Interface
for easy configuration

sbgCenter



EKINOX SUBSEA SERIES - Specifications

Full specifications can be found in the Ekinox Subsea User Manual, available upon request.

3D ORIENTATION

Roll, Pitch	0.05° RMS	
Heading	0.5° RMS	Magnetometers
	0.1° RMS	Connected to a GPS
	0.05° RMS	Connected to a Dual Antenna GPS

HEAVE

Real-time	5 cm or 5%	Whichever is greater, velocity aided
Wave period	0 to 25 s	Auto-adjusting
Delayed	2.5 cm or 2.5%	Whichever is greater, velocity aided
Wave period	0 to 50 s	

POSITION (WITH SPLITBOX)

Single Point L1	1.5 m
Single Point L1/L2/L5	1.2 m
SBAS	0.6 m
DGPS	0.4 m
RTK (option)	1 cm + 1 ppm

OPTION: TerraStar, OmniSTAR, Marinestar, Veripos

VELOCITY AIDED POSITIONING

DVL *	< 0.2% TD **	External Gyro-compass or GPS Heading
	< 0.3% TD	Internal Magnetometer. Lawn mower pattern with 1 km lines.

PHYSICAL CHARACTERISTICS

Specifications	Titanium 200 (EL)	Titanium 6,000 (ED)
Depth Rating	200m	6,000m
Weight in air	1.55 kg (3.4 lbs)	2.34 kg (5.2 lbs)
Weight in water	0.86 kg (1.9 lbs)	1.43 kg (3.2 lbs)
Diameter	8.7 cm (3.4")	9.2 cm (3.6")
Height	13.8 cm (5.4")	15.5 cm (6.1")
Power Consumption	< 3 W	
Supply Voltage	9 to 36 VDC	

INTERFACE

Aiding Sensors	2x GPS, DVL, Depth, External Magnetometer, Gyro-compass, User Inputs, Veripos
Protocols	Output: NMEA, ASCII, Binary, TSS, Simrad Input: NMEA, Trimble, Novatel, Septentrio, Hemisphere, Veripos, Fugro, PDO, PD6
Output Rate	0.1 to 200 Hz
Logging Capacity	8 GB ≈ 48h @ 200 Hz
Serial RS-232/422	5 serial inputs / 3 serial outputs
Ethernet	5 virtual serial ports

ENVIRONMENTAL SPECIFICATIONS

Operating Vibrations	1 g RMS – 20 Hz to 2 kHz as per MIL-STD-810G
Depth Rating	Titanium enclosure: 200 m or 6,000 m
Operating Temperature	-20 to 60°C / -4 to 140°F
MTBF	50,000 hours

PRODUCT CODE

▪ standard product options

EKINOX-#-G4A1-PS-E#

MODEL
M: MRU
U: Underwater INS

ACCELEROMETERS
1: 2 g

DEPTH RATING
L: 200m
D: 6,000m

* Depends on DVL performance ** TD: Travelled Distance
Typical RMS values. All specifications subject to change without notice.