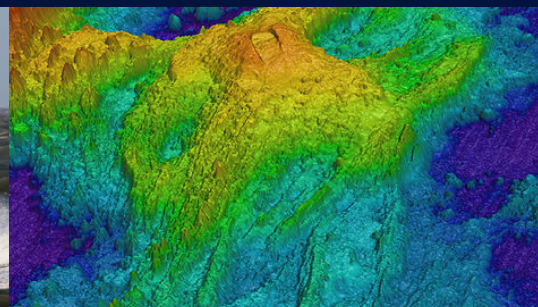
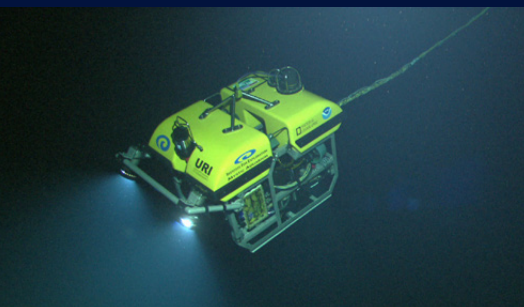


Ekinox Subsea Series

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



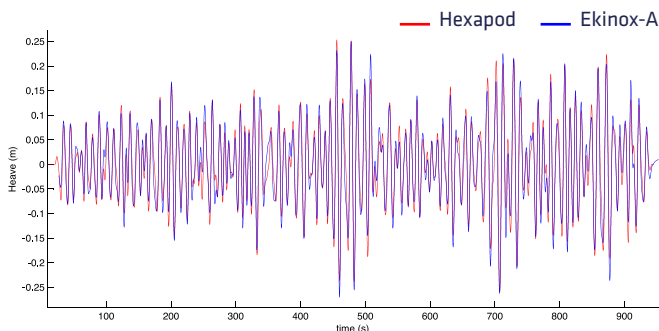
High Performance

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

- » Navigation with DVL, GPS, USBL, LBL
- » 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

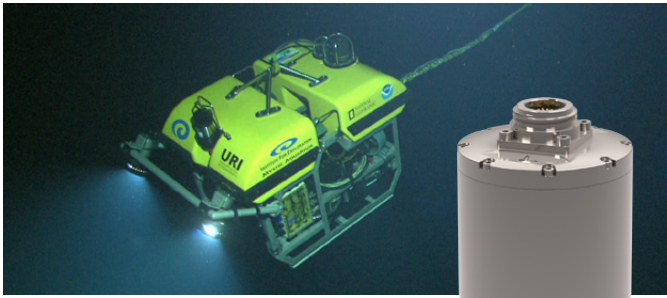
No need to enter wave frequencies, Ekinox adjusts to the sea state to compute the best heave data and deliver it on up to four different locations.

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.

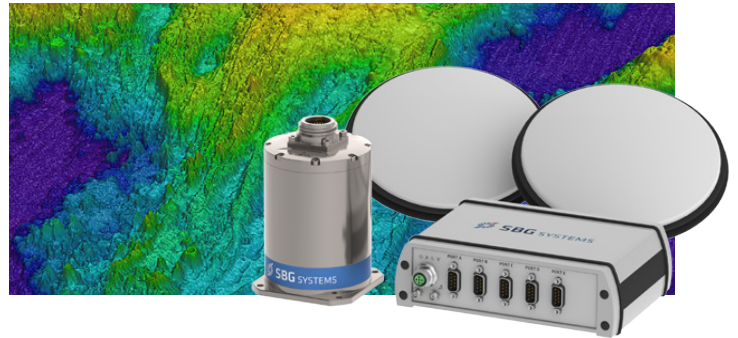
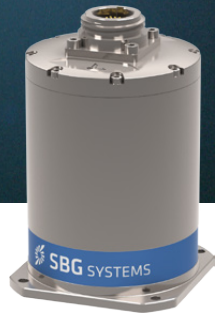


Designed to Meet Marine Technical Needs



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, USBL, etc.) for consistent subsea navigation.



READY-TO-USE PACKAGE FOR HYDROGRAPHY

This recommended package includes a 200m 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, or OmniSTAR.

Long-term reliability

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

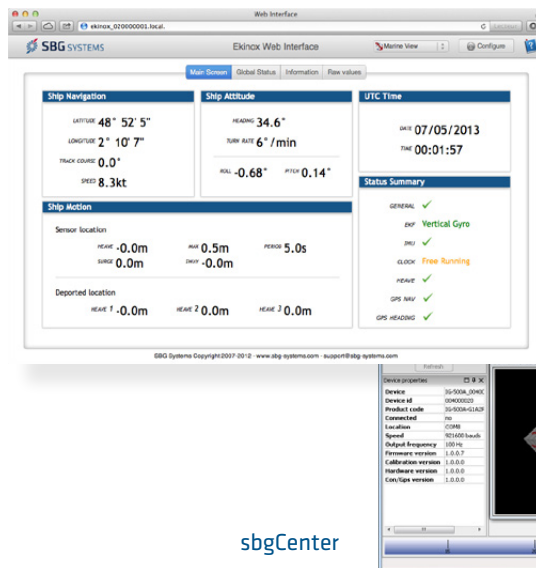


Starter Kit

The Development kit consists of a waterproof transport box including power supply, an Ethernet cable, a quick start guide and the user manual. A set of software tools is included such as the sbgCenter application, API C libraries with code examples, etc.

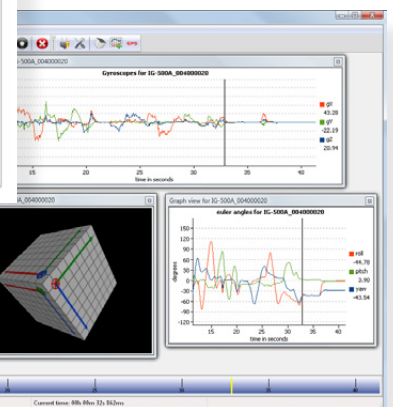


Free support and updates



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 | 0.02 m |

OPTION: TerraStar, OmniSTAR

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 | |

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

INTERFACE

| | |
|-------------------|--|
| Aiding Sensors | 2x GPS, DVL, USBL*, LBL*, Depth, EM log, External Magnetometer, Gyro-compass, User Inputs, Veripos |
| Protocols | NMEA, ASCII, Binary, TSS, SIMRAD |
| 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 |

*Contact us for more information

ENVIRONMENTAL SPECIFICATIONS

| | |
|-----------------------|--|
| Operating Vibrations | 8 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#-I#

MODEL

M: MRU
U: Underwater INS

ACCELEROMETERS

1: 2 g

DEPTH RATING

L: 200m
D: 6,000m

INTERFACE

1: RS-232
4: RS-422 ▪