SEAPATH® 130 SERIES

KONGSBERG

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THE COMPACT HEADING, ATTITUDE AND POSITIONING SENSOR

The Seapath 130 series is developed specifically for hydrographic surveying where high precision heading, position, roll, pitch, heave and timing are critical measurements. The product combines state-of-the-art dual frequency GNSS receivers, inertial technology and processing algorithms in a compact and portable package.

Product components
The main component is the Sensor Unit with the integrated GNSS antennas and receivers. The Sensor Unit mounts on top of the vessel mast or a pole. On top of the transducer the inertial sensor of type MRU H, 5 and 5+ is mounted within a light weight subsea housing. The Seapath operator software is installed on a connected PC for configuration and monitoring. All the components are connected through a spider cable with MRU connection, three configurable output serial lines, DGNSS correction input, 1PPS output, network communication and power.

Product range
The Seapath 130 series is delivered in the following product range:

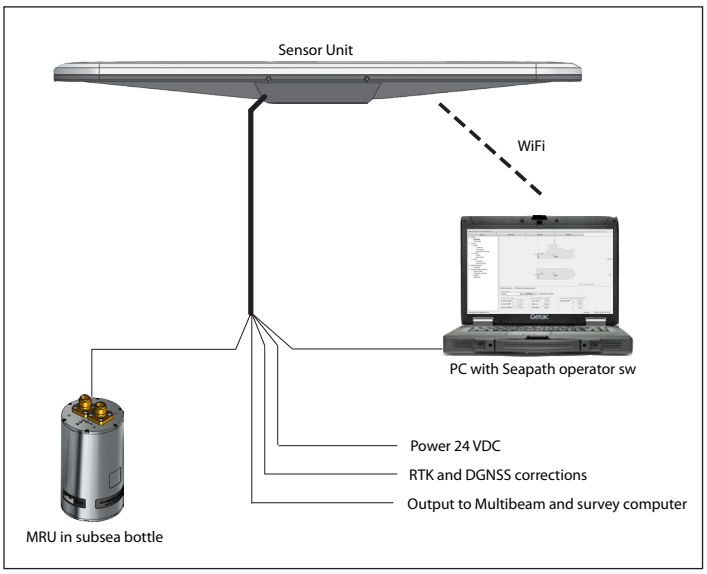
- Seapath 134 with MRU H to 0.03° roll and pitch accuracy
- Seapath 135 with MRU 5 to 0.02° roll and pitch accuracy
- Seapath 136 with MRU 5+ MK II to 0.008° roll and pitch accuracy

Interfaces
The product has three configurable RS-232/422 serial lines and eight Ethernet ports for output of motion data and NMEA messages to the multibeam and survey computer.
DGNSS corrections of various quality and sources are input on a configurable RS-232/422 serial line or Ethernet.

Function
The advanced Seapath navigation algorithms integrates RTK GNSS data with the inertial sensor data from the MRU. This gives the Seapath 130 unique advantages compared to stand-alone RTK products. The Seapath product's accurate roll, pitch and heading measurements allow the RTK antenna position to be referenced to any point on the vessel where accurate position and velocity are required. All data from Seapath have the same time stamp and the output is in real-time. Subdecimetre position accuracy can be achieved through download of satellite orbit and clock data from internet and by post processing of satellite and IMU data.

FEATURES

- Compact and robust integrated INS/GNSS system
- 0.008° to 0.03° roll and pitch accuracy dependent on MRU model part of the product.
- No accuracy degradation in roll, pitch and heave measurements during turns
- 5 cm real-time heave output for periods up to 25 seconds
- Precise heave at long wave periods by use of the PFreeHeave® algorithms
- 120-channel dual frequency GPS/GLONASS receiver
- Robust against GNSS dropouts due to the inertial sensor part of the product
- Multiple differential correction support including SBAS
- RTK correction on RTCM format supported
- SeaSTAR®, OmniSTAR® and Marinestar® corrections supported
- All data are provided with time stamp with an accuracy of 0.001s to the actual measurement time
- Outputs on RS232, RS422 and Ethernet
- Up to 100 Hz data output rate
- Dual-frequency GPS/GLONASS ionospheric compensation
- Logging of raw satellite and IMU data possible
- Meets IHO special order requirements



TECHNICAL SPECIFICATIONS

PERFORMANCE

Heading accuracy	0.2° RMS
Heave accuracy (real-time)	5 cm or 5% whichever is highest
Heave accuracy (delayed signal)	2 cm or 2% whichever is highest
Heave motion periods (real-time)	1 to 25 seconds
Heave motion periods (delayed signal)	1 to 50 seconds
Position accuracy DGNSS/GLONASS	0.5 m RMS or 1 m 95 % CEP
Position accuracy SBAS	0.5 m RMS or 1 m 95 % CEP
Position accuracy Fugro XP2/G2	0.1 m RMS or 0.2 m 95 % CEP
Position accuracy (RTK in X/Y)	1 cm + 1 ppm RMS
Position accuracy (RTK in Z)	2 cm + 1 ppm RMS

DATA OUTPUTS

Communication ports	3 serial RS232/RS422 lines and 8 Ethernet UPD/IP ports
Data output interval	Programmable in 0.01-sec. steps and 1PPS pulse
Data update rate	Up to 100 Hz

DIMENSION AND WEIGHT

Sensor Unit	1200 mm (L) x 200 mm (W) x 100 mm (H), weight 6.5 kg
MRU in light weight subsea bottle	Ø120 x 241 mm, weight 3.7 kg.

OPERATING TEMPERATURE

Sensor Unit	-40 to +70°C
MRU	-5 to +55°C

POWER

Sensor Unit	24 V DC, 10 W
MRU	24 V DC, 12 W

HUMIDITY

Sensor Unit	Hermetically sealed
MRU	Hermetically sealed

Specifications subject to change without any further notice.

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