CodaOctopus:MOTION
Precision Attitude & Positioning

Benefits

Precision position, heading, heave, pitch and roll in a single compact unit

NEW: All systems are dual antenna GPS-, GLONASS- and BeiDou- capable for position and heading seeding

NEW: Improved heading lock stabilization

Maximum performance and accuracy under conditions of poor GNSS reception

Adherence to International Hydrographic Organization (IHO) survey standards

F280 series directly supported in leading Hydrographic Survey applications

Reduced installation time

Applicable for slow or non-moving platforms through use of Pre-calibrated Housing

Easy to use Web Interface

Highly Competitive Price

Expert 24x7 Technical Support

Waterproof housing rated to IP67 standards

Accurate, reliable MOTION and positioning data in a compact package

The F280 series of GNSS-aided (inertial) attitude and positioning systems are high quality, robust packages for the marine hydrographic and laser survey market.

Defined to meet the exacting requirements of the multibeam survey market, the F280 series systems are easy to install, easy to use and produce very accurate positioning, heading and MOTION data in the most dynamic offshore conditions.

The light yet rugged F280 product series is a reliable and cost-effective solution on marine survey vessels of all sizes.

All systems are dual antenna GPS-, GLONASS- and BeiDou- enabled to improve constellation coverage and heading lock stabilization.

Easy-to-use web interface provides configuration, control and processing functionality including iHeave (intelligent heave).

In addition to real-time heave measurement and output, the F280 series now directly computes and outputs our long-standing and proven iHeave (intelligent Heave) solution without the need for top-side processing or software. iHeave is a tailored solution specifically for long period ocean swell compensation and is fully integrated with the F280 series of Precision Attitude and Positioning Systems. In many parts of the world, hydrographic survey is severely affected by low frequency ocean swells often up to 70 seconds long, resulting in distortions in bathymetric measurements. Conventional techniques for real-time heave measurement can only offer limited accuracy and are insensitive to ocean swells exceeding 10 to 20 seconds. The inbuilt iHeave algorithm analyzes the raw motion data and allows a more accurate determination of the real heave motion experienced by a vessel, and enables the output of precise heave values for all ocean swells.

Additionally, for extremely rapid vessel deployments, a Pre-Calibrated Housing accessory is available to significantly reduce the installation and calibration phases of operation.

Features

- Survey grade GNSS, attitude and heave sensor in one box
- High accuracy position, heading, heave, pitch and roll at up to 100 Hz
- Connectivity to multiple sensors simultaneously over Ethernet and Serial
- Multiple lever arms to support precise INS positioning for multiple platform locations or sensors
- Rapid Heading initialization (Under 30 secs typically)
- Web based setup and monitoring - ability to store multiple different profiles and recall these instantly - ideal for survey teams with multiple vessels
- Tightly integrated GNSS and inertial components result in increased accuracy and reduced setting times when compared to outputs from separate sensors
- Enhanced performance under conditions of poor GNSS reception
- Compatible with HYPACK, QINSy, CARIS and other navigation packages
- Industry standard formats and interfaces
- iHeave (intelligent Heave) processing available as standard

Applications

- Hydrographic Survey
- Bridge, dam, harbour inspection
- Dredging
- Offshore renewable energy
- Environmental survey
- Shipping channel survey
- Marine laser scan survey

CodaOctopus:MOTION
Precision Attitude & Positioning

F280 Series Systems

F280	Single Frequency GNSS system with SBAS and DGPS GNSS corrections capabilities (30cm positional accuracy).
F285	As F280 with addition of multi frequency GNSS receiver and RTK corrections activation to allow a maximum positional accuracy of 1cm.
F290	As F285 with addition of built-in Atlas™ corrections receiver and Atlas™ Global Correction Service License (L-Band). (Yearly Subscription required.)

Upgrades available between models at any time. Pre-calibrated housing upgrades can be applied to any model.

Dynamic Positioning

Positional Accuracy (RMS)	(F280) 0.30m with DGPS correction (all models) 0.30m with SBAS correction (all models) 1.20m no correction (all models) (F285) 0.008m + 1ppm with L1/L2 RTK Correction (F290) 0.04m with Atlas™ Global Correction Service
Roll and Pitch (1σ)	0.025º
True Heading (1σ)	0.04º (2m baseline) 0.025º (4m baseline)
Heave (1σ)	5cm or 5% (on-line) 3.5cm or 3.5% (iHeave)
Velocity (1σ)	0.014 m/s

Physical

Dimensions	127mm x 155mm x 113mm (5in x 6.1in x 4.4in)
Weight	2.2kg (4.9 lbs)
Power	9-36Vdc, 15 Watts (110-240Vac adapter supplied)
Antennas	(F280) Single-Frequency, Multi-GNSS, SBAS capable (F285 & F290) Multi-Frequency, Multi-GNSS, SBAS and Atlas corrections capable
Antenna Cables	15m standard (30m optional)
Operating Temperature	-10º to 60º C
Waterproof	IP67 Rated (Maximum depth of 1 meter up to 30 minutes. When Power and Antenna connectors are mated.)
Vibration	$0.1g^2$/Hz, 5-500 Hz

Interfaces

Ethernet 100Mbit	Full control and configuration, high speed data output (COMPAC)
Serial Port 1	User-configurable for position, heading and attitude strings. Choose from: TSS1, TSSHHRP, EM1000, EM3000, COMPAC, GGA, GSA, GST, GSV, GGK, HDT, PASHR, PRDID, PTCF, RMC, ROT, VTG, UTC, ZDA, PPS and SPD.
Serial Port 2 & 3	As Serial Port 1
GNSS Correction Port	Correction input (DGPS, RTK) Formats: RTCM 2.1/2.2/2.3/3.0/3.1; CMR, CMR+
Other	1 PPS on BNC

PC System Requirements

Web Interface	Compatible with all major browsers.

Sales Worldwide: +44 131 553 1380   Sales Americas: +1 407 735 2400
More Information: sales@codaoctopus.com salesamericas@codaoctopus.com   www.codaoctopus.com
Technical Support Worldwide: +44 131 553 7003   Technical Support Americas: +1 888 340 2632

CodaOctopus
Sound Underwater Intelligence