Coda Octopus:MOTION
Precision Attitude & Positioning

/F280 Series®

Benefits

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

Multi frequency dual antenna GPS-, GLONASS- and BeiDou- capable

for position and heading seeding

Ruggedized IP67 Rated Housing

Built in iHeave (no additional software or hardware required)

Improved Heading Lock Stabilization

Maximum performance and accuracy under conditions of poor GNSS access

Adherence to International Hydrographic Organization (IHO) survey standards

F280 series directly supported in leading Hydrographic Survey applications

Easy to use Web Interface

Highly Competitive Price

Round -the-Clock Technical Support

Enabling accurate Floating LIDAR System (FLS) measurements for Wind Resource Assessment (WRA)

The F280 GNSS-Aided Inertial Navigation System (Attitude and Positioning System) is one of the models within our new generation of high accurate measurement Motion F280 Series® instruments suitable for use in Floating LIDAR System (FLS) deployments for Wind Resource Assessment (WRA).

Real-Time Measurement F280 Series products can be readily integrated into Floating LIDAR Systems to produce very accurate positioning, heading and attitude data in the most dynamic offshore conditions for real-time compensation of FLS measurements.

This new generation of GNSS-Aided INS systems embeds high accuracy components (accelerometers and gyroscopes) and smart algorithms. Designed to meet the exacting and demanding requirements of the FLS market, packaged in an IP67 rated housing, the F280 Series instruments are easy to install and use, with data output rates up to 100Hz over Ethernet and up to 3 Serial Ports. The light and rugged F280 Series is a compact, reliable, repeatable, and cost-effective solution.

The F285 is one model within our F280 Series®. This model is Multi frequency, dual antenna multi-GNSS receiver for improved constellation coverage and heading lock stabilization. The unit supports RTK, SBAS and DGPS correction services for improved position accuracy.

An easy-to-use and intuitive web interface provides configuration, control and processing functionality including built-in 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 any additional top-side processing or software.

The F280 Series is also available in a Pre-Calibrated Housing Assembly Configuration which removes the need for Field Calibration and therefore facilitates fast and repeatable field deployment and set up.

Data Post-Processing F280 Series® Motion INSight is a GNSS-Aided Inertial Post Processing tool for the F280 Series® that allows previously collected data to be repaired, enhanced or re-processed to improve the quality, accuracy and repeatability of all survey outputs and deliverables.

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Features

✓	One-Box solution Survey Grade GNSS, attitude and heave sensor
✓	Compact, light weight and low power F280 Series allows for easy deployment in/on a buoy
✓	Multi-frequency multi-GNSS receiver and RTK corrections activation to allow a maximum positional accuracy of 1 cm.
✓	Connectivity to multiple sensors simultaneously over Ethernet and Serial
✓	Multiple Lever Arms to support precise INS Positioning for Multiple Platforms locations or Sensors
✓	Explicit vessel Centre of Gravity (COG) support for improved heave accuracy
✓	Rapid Heading Initialization (Under 30 seconds typically)
✓	Web-Based Set Up
✓	Real Time Monitoring of MOTION Events
✓	Option for Multiple Configuration Profiles and Instantaneous Recall of Profiles
✓	Tightly Integrated GNSS and Inertial Components resulting in increased accuracy and reduced setting up times when compared to outputs from separate sensors
✓	Enhanced performance under conditions of poor GNSS access
✓	Industry standard formats and interfaces
✓	iHeave (Intelligent Heave) Processing Capability included as standard
✓	Compatible with HYPACK, QINSy, CARIS and other navigation packages

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Specification

F285

Multi Frequency multi GNSS system with RTK, DGPS and SBAS GNSS corrections capabilities (1cm positional accuracy). Higher accuracy models also available.

Dynamic Positioning Information	Positional Accuracy (RMS)	0.008m + 1ppm with L1/L2 RTK corrections
		0.30m with DGPS corrections
		0.30m with SBAS corrections
		1.20m with GNSS corrections (Standalone)
	Pitch and Roll (1σ)	0.025°
	True Heading (1σ)	0.04° (2m baseline) 0.025° (4m baseline)
	Heave (1σ)	5cm or 5% (online) 3.5cm or 3.5% (iHeave)
	Velocity (1σ)	0.014 m/s
Physical	Dimension	127mm x 155mm x 113mm 5in x 6.1in x 4.4in
	Weight	2.2kg (4.9lbs)
	Power	9-36Vdc, 15 Watts (110-240Vac adaptor supplied)
	Antennas	Single Frequency, Multi-GNSS, SBAS Capable
	Antenna Cables	15m (49.2ft) standard. 30m (98.4ft) optional.
	Operating Temperate	-10° to 60°C (14° to 140°F)
	Waterproof	1P67 Rated. Maximum depth of 1m (3.2ft) – when Power and Antenna Connectors are mated.
PC System Requirements	Web Interface – Compatible with all major Web Browsers	

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iHeave	iHeave is a tailored solution specifically for long period ocean swell compensation and is fully integrated with the F280 Series 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.	
Interfaces	Ethernet 100Mbit	Full Control and Configuration, High Speed Data Output (COMPAC)
	Serial Port 1	User-Configurable for position, Heading and Attitude Strings. Users May Chose From: • TSSI • TSSHHRP • EM1000 • EM3000 • COMPAC • GGA • GST • GSV • GGK • HDT • PASHR • PRDID • PTCF • RMC • ROT • VTG • UTC • ZDA • PPS • SPD
	Serial Port 2&3	As Serial Port 1
	GNSS Correction Port	Correction Input (RTK and DGPS) Formats RTCM 2.1/2.2/2.3/3.0/3.1, CMR, CMR+
	Other	1PPS on BNC

Coda Octopus
Sound Underwater Intelligence

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