

Octopus F180series

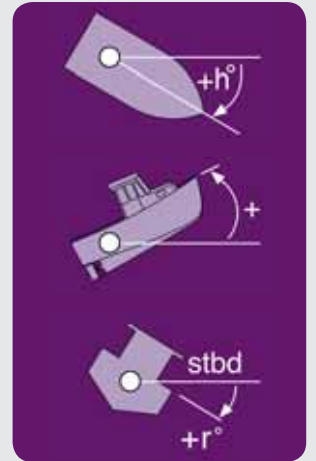
Precise, reliable
motion and positioning data
in a compact package



The Octopus F180 attitude and positioning systems comprise a series of no-nonsense, compact packages. The graphical software interface makes configuration very simple, with most users installing and configuring the F180 with no prior training. All models are easy to use, producing highly accurate positioning and motion data in the most dynamic offshore conditions.

Refined to meet the exacting requirements of the multibeam survey market, the Octopus F180series includes six variants to meet the widest of requirements:

F180	Standard system with 20cm RTK, DGPS, WAAS and EGNOS capability
F180+	As F180 but with L1 & L2 on both antenna for rapid heading initialisation and improved immunity to drop-out
F185	As F180 but with improved positional accuracy capability to 1cm when used with a suitable external RTK receiver and base station
F185+	As F185 but with L1 & L2 on both antenna for rapid heading initialisation and improved immunity to drop-out
F190	As F185 but with integrated OmniSTAR differential receiver, providing up to 20cm positional accuracy without additional DGPS or RTK input
F190+	As F190 but with L1 & L2 on both antenna for rapid heading initialisation and improved immunity to drop-out



All systems offer the same high performance in terms of heading and motion accuracy and all can be upgraded to the next specification level.

DGPS, RTK (20cm) and SBAS corrections (WAAS/EGNOS) are standard on all models and additional options provide RTK (1cm) and OmniSTAR (20cm) accuracy. For increased satellite signal observations and faster RTK results, all systems can also be upgraded to receive GLONASS signals in addition to GPS.

F180series technology, with its origins in the high speed, mechanically extreme world of motor racing, has been modified and enhanced to provide precise and reliable data to marine users. The light yet robust equipment has proved to be a cost-effective solution on marine survey vessels of all sizes, delivering heave, pitch, roll, heading and positioning information in real time.



Octopus F190 & F190+

Configured to receive satellite differential correction broadcasts from Fugro's OmniSTAR system, the Octopus F190 and F190+ systems offer optimum performance in ports, harbours and inland waterways. Providing positional accuracy of up to 20cm without the need for additional equipment, and 1cm if appropriate RTK connections are available, these variants are ideal for applications such as dredging, construction and shipping channel surveys.

- A subscription to OmniSTAR is required and must be purchased directly from Fugro.
- OmniSTAR is only available for use on inland waterways and some inshore coastal areas and excludes some major inland lakes. (Service performance deteriorates sharply offshore).
- For all potential coastal applications including ports and harbours, users should contact Fugro OmniSTAR to check the limits of operation in their specific location.
- OmniSTAR is a registered trademark of Fugro NV.

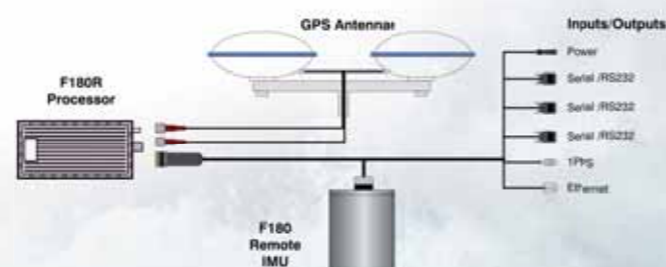
Octopus F180R

An optional extension of the F180series, the Octopus F180R enables the motion sensing elements, or inertial measurement unit (IMU), to be located remotely from the main processor. The remote IMU is housed in a waterproof pod with a waterproof connector and it can be mounted right at the point of interest, such as adjacent to a multibeam transducer head. On larger vessels the remote IMU allows greater flexibility of installation with the motion sensing elements located deep in the vessel's hull.



All other components of the F180 system remain unchanged with the processor and the GPS housed in the same rugged box as the standard models. In common with the standard one-box system, all GPS variants are supported (see page 4 for details).

To aid installation and configuration, a click-and-drag configuration wizard allows the remote IMU to be placed and oriented graphically; setting-up the Octopus F180R is therefore fool-proof and quick.



FEATURES

- 4 instruments in one box
- High accuracy heave, pitch and roll
- Precise heading & position
- Position-accuracy up to 1cm with RTK
- Extremely compact and rugged
- Simple to install and configure
- Compatible with HYPACK and QINSY
- WAAS & EGNOS enabled
- GLONASS option
- Remote lever-arm
- Intelligent heave processing
- Standard data formats and interfaces
- Specific high performance variant for:
 - Inland waterways
 - Ports and harbours

BENEFITS

- Maximum accuracy at all times
- Reduced installation time
- Minimal equipment
- Enhanced INS aided positioning



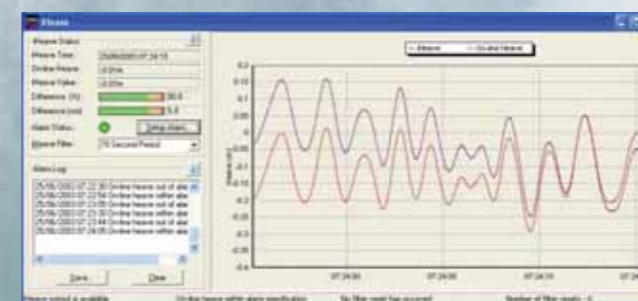
Pre-calibrated housing option

Designed to accommodate the Octopus F180 inertial sensors and the twin Novatel antenna, the pre-calibrated housing significantly reduces the time involved in installing a motion sensor on vessels of all sizes. The weather-proof unit enables the system to be calibrated prior to installation on the vessel. With the offset measurements already set, once the mounting is bolted into place the system can be up and running in 15 minutes.

The pre-calibrated housing option is available for all F180series models except the Octopus F180R.

iHeave

Providing an enhanced heave capability, iHeave intelligent heave processing is supplied as standard with all Octopus F180series systems. Designed to detect and compensate for long period heave of up to 70 seconds, iHeave can produce significantly more accurate heave in almost all situations such as during tight turns and in areas where long period swells exist. Working on-line in near-real-time or as a post process, iHeave increases survey efficiency by generating high accuracy processed heave data in the most demanding of circumstances.



"The F180 is very compact and lightweight which makes it a good choice for installations on vessels of opportunity. Everything needed to correct a multibeam survey can be carried to the job in one small box."

Fugro Jacques GeoSurveys, Inc., St.John's, NL, Canada

"I have compared the Octopus F180 against a number of sensors and the key things I noted were its ease of use, quick set up and short calibration time. When turned on from a cold morning start, the system quickly initialised and gained heading lock, often before the boat left the dock."

Parametrix, Inc., USA

Octopus F180series Precision Attitude & Positioning Systems

General Performance and Specifications

	F180/F180+/F180R/F180+R F185/F185+/F185R/F185+R	F190/F190+/F190R/F190+R
PERFORMANCE		
Positional accuracy (CEP)	1.5m stand-alone 0.6m SBAS 0.4m DGPS Up to 1cm with RTK	0.2m with subscription*, Up to 1cm with RTK
Velocity	0.014 m/s	0.014 m/s
Roll and Pitch	<0.025°	<0.025°
True Heading	1m baseline - 0.1° 2m baseline - 0.05° 4m baseline - 0.025°	1m baseline - 0.1° 2m baseline - 0.05° 4m baseline - 0.025°
Heave	5% of heave amplitude or 5cm	5% of heave amplitude or 5cm



*Satellite-broadcast differential correction subscription services

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PHYSICAL (EXCLUDING ANTENNAE AND CABLES)

	MAIN PROCESSOR	REMOTE IMU HOUSING
Dimensions	120 x 234 x 80mm (4.73 x 9.2 x 3.15")	120mm (4.73") diameter x 150mm (5.9") long
Weight	2.5kg (5.5 lb)	2.2kg (4.85 lb)
Power	9-18 Vdc, 25 watts	9-18 Vdc, 25 watts
Temperature	-10 to 60°C	-10 to 60°C
Humidity	Splash proof	Waterproof
Vibration	0.1g2/Hz, 5-500Hz	0.1g2/Hz, 5-500Hz
Antennae	Novatel pinwheel	n/a
Connection	Standard F180 break-out cable	Burton multi-pin waterproof
Cables	15m standard, 30m optional	

INTERFACES

Ethernet 100base-T	High speed full functionality data output (MCOM). F180 software for full control and configuration. Direct connection to HYPACK and QINSy
Serial port 1 and Serial port 2	User configurable for position and heading or attitude strings: TSS1, TSSHRP, EM1000, EM3000, ZDA, VTG, GGA, HDT, PASHR, PRDID, MCOM, GST, UTC, ROT, GKG, RMC
Serial port 3	Differential correction input (RTCM, RTCA, CMR and CMR+)
Other	1 PPS on BNC
Remote IMU	6-way multi-pin connector on main F180 interface for remote IMU cable connection



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We reserve the right to change equipment specifications without notice.

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Enhance your operational performance with round-the-clock technical support, software maintenance and more with membership of CodaOctopus team.

Depending on the conditions in which your F180series system is kept or operated, we recommended re-calibrating your unit to ensure optimum performance from the accelerometers. Re-calibration is carried out at our service premises and is free of charge for units covered by a valid team membership.

Complimentary 12 months' membership is included with the purchase of all F180series systems.



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Headquartered in USA

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