

F180 series™

Precision Attitude & Positioning Systems



The Octopus F180™ series of precision attitude and positioning systems has been expanded to include new variants with enhanced performance to meet the widest range of requirements, including:

- F180™** – standard system with 20cm RTK and DGPS capability
- F185™** – with L1/L2 and 1cm RTK capability
- F190™** – with L1/L2 and integral satellite differential receiver

In addition, all variants can be further enhanced to F180+/F185+/F190+ to include L1/L2 on the secondary antenna for rapid heading initialisation and improved immunity to drop-out. All variants offer the same high performance in terms of heading and motion accuracy, and all can be upgraded to the next specification level.

For optimum performance in ports harbours and inland waterways, the F190 includes an integrated satellite-broadcast differential correction receiver, enabling it to receive corrections from subscription services*. Providing positional accuracy of up to 20cm without the need for any additional equipment, the F190 is ideal for applications such as dredging, construction and shipping channel surveys.

iHeave™ intelligent heave processing provides an enhanced heave capability and supplied as standard with all F180 series 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. Working on-line in near-real-time or as a post process, iHeave generates high accuracy processed heave data in the most demanding of circumstances, increasing survey efficiency.



F180 /F185



F190 extended unit with integral satellite DGPS receiver

FEATURES

- 3 instruments in one box
- High accuracy heave, roll and pitch
- Precise heading & position
- Position-accuracy up to 1cm with RTK
- Extremely compact and rugged
- Simple to install and configure
- WAAS & EGNOS enabled
- 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

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General Performance and Specifications

Performance	F180/F185	F190
Positional accuracy (CEP)	0.5 - 4.0m stand-alone, 20cm - 1cm with RTK	20cm with subscription*, 1cm with RTK
Velocity	0.03 ms ⁻¹	0.03 ms ⁻¹
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
Physical (exc. antennae and cables)		
Weight	2.5 kg	2.75 kg
Power	9-18 Vdc, 25 watts	9-18 Vdc, 30 watts
Temperature	-10 to 60°C	-10 to 60°C
Humidity	splash proof	splash proof
Vibration	0.1g2/Hz, 5-500Hz	0.1g2/Hz, 5-500Hz
Antennae	Novatel pinwheel	Novatel pinwheel
Cables	15m standard, 30m optional	15m standard, 30m optional
Interfaces		
Ethernet 100base-T	Full control and configuration, high speed full functionality data output (MCOM)	
Serial port 1	User configurable for position and heading or attitude strings: TSS1, TSSHHRP, EM1000, EM3000, ZDA, VTG, GGA, HDT, PASHR, PRDID, MCOM	
Serial port 2	User configurable for position and heading or attitude strings – as above	
Serial port 3	Differential correction input (RTCM, RTCA, CMR and CMR+)	
Other	1 PPS on BNC	

Product	RT20, 20cm RTK input capability, L1 only	L1 & L2 on primary antenna	RT2, 2cm RTK input capability	Satellite-broadcast differential receiver built-in*	L1 & L2 on secondary antenna	Description
F180	✓					Standard F180 with up to 20 cm positional accuracy when used with a suitable external RTK receiver and base-station
F180+	✓	✓			✓	As standard F180 but with L1 & L2 on both antenna for rapid heading initialisation
F185	✓	✓	✓			As standard 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
F190	✓	✓	✓	✓		As F185 but with integral satellite-broadcast differential correction receiver, specifically developed for inland waterways, ports and harbours. Provides up to 20cm positional accuracy without any additional DGPS receive hardware. Additional subscription required*
F190+	✓	✓	✓	✓	✓	As F190 above, but with L1 & L2 on both antenna for rapid heading initialisation

*Satellite-broadcast differential correction subscription services

- The F190 is currently configured to receive satellite differential correction broadcasts from Fugro's OmniSTAR™ system, and requires an additional subscription for this service.
- Subscriptions to OmniSTAR™ must be purchased direct from Fugro.
- OmniSTAR™ is only available for use on land or inland waterways 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.
- Further details of restrictions and limitations can be found in the terms and conditions of the OmniSTAR™ subscription agreement.
- OmniSTAR™ is a trademark of Fugro NV.

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A  product. We reserve the right to change equipment specifications without notice.