## SMC IMU

## **Motion Sensors**



SMC has developed its IMU range of Motion Sensors to meet the requirements of the hydrographic and marine sectors. The IMU range provides high accuracy motion measurement data in dynamic environment in all areas from small hydrographic vessels to large oil rigs in all weather conditions.

## **Key Specifications**

- Roll & Pitch 0.03° (RMS) Dynamic Accuracy
- Heave 5 cm or 5 %
- Accelerations / Velocities
- Velocity Input Formats RMC, RMA, VTG, VBV, VHW
- Heading Input Formats NMEA 0183, HDT, HDG
- Various Industry Protocols NMEA
- 2 years warranty



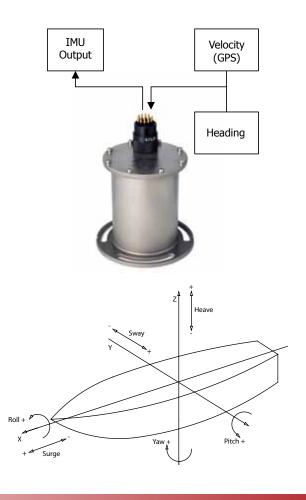
The SMC IMU uses solid state gyros and accelerometers to provide real time motion measurements with high dynamic accuracy even during accelerations. RS232 or RS422 outputs with RS232 velocity and heading inputs for aiding furing vessel turns. High quality titanium design, construction and assembly produce an IMU with an extremely high reliability in the most demanding marine environment.

Every SMC IMU is individually calibrated and tested for roll, pitch & heave as well as all directions of acceleration, inside a calibration machine with a controlled temperature environment between 0 and +55 degrees Celsius.

The SMC IMU is supplied with a data distribution unit, cables and windows based software for ease of set up and configuration. The configuration software enables the user to configure the IMU parameters for the installation.

The SMC IMU is available in a variety of design and depth options.





## **SMC IMU Motion Sensors**













IMU-10x-30 with cable

IMU-10xb-30 with cable

IMU-10xb-30

Technical Specifications	IMU-106	IMU-107	IMU-108
Roll / Pitch	N/A	Yes	Yes
Accelerations X, Y, Z	N/A	Yes	Yes
Heave	Yes	N/A	Yes
Performance			
Angle Accuracy static	N/A	0.02° RMS	0.02° RMS
Angle Accuracy Dynamic © ±5° simultaneous roll and pitch	N/A	0.03º RMS	0.03° RMS
Resolution Angle	N/A	0.0010	0.0010
Resolution Heave	0.01m	N/A	0.01m
Angle range Roll/Pitch	± 30°	± 30°	± 30°
Heave range	±10m	N/A	±10m
Heave Accuracy	5cm or 5%	N/A	5cm or 5%
Acceleration accuracy	N/A	0.01 m/s <sup>2</sup> RMS	0.01 m/s <sup>2</sup> RMS
Communications			
IMU Configuration Software	The IMU is shipped with SMC configuration windows software allowing on site setup		
Output Signal Protocol	Multiple, user selectable Output Protocols ASCII NMEA and binary		
Communications Interface	Output RS422 and RS232. Analog with remote converter (optional) 2 x RS232 External inputs, (not available on all models) Velocity input formats RMC, RMA, VTG, VBV, VHW; Heading input formats HDT, HDG		
Physical			
Dimensions for IMU-10x (W x H)	tube Ø89, mounting plate Ø134, flange Ø110) x 127		
Weight	~2 kg		
Housing Material	Titanium		
Environmental			
	0° to +55° Celsius (-10° to +65°); Storage Temperature -40° to +65° Celsius		
Temperature (absolute max)	0° 10 +55° Ceisius (-10° 10 -	-65°); Storage Temperature -2	10° to +65° Ceisius

IP64 (standard); IP68 30 meter depth rated (optional)

Warranty & Support

Power requirements MTBF (computed)

**Depth rating** 

**Standard** 

**Warranty** 2-year Limited Hardware & Software Warranty

**Support** Free Technical & Hardware support

**Bundled Delivery** 

**Junction Box** Multiple Input & Output Connection Case,

including 10 m cable

12 - 30 VDC; 2 W

Complies with the IEC 60945

50 000 hours





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