

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, VBW, VHW
- Heading Input Formats NMEA 0183, HDT, HDG
- Various Industry Protocols NMEA
- 2 years warranty

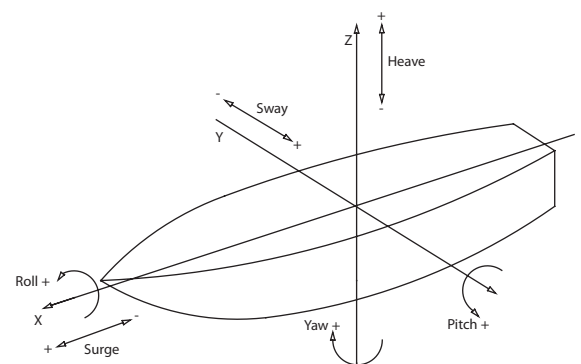
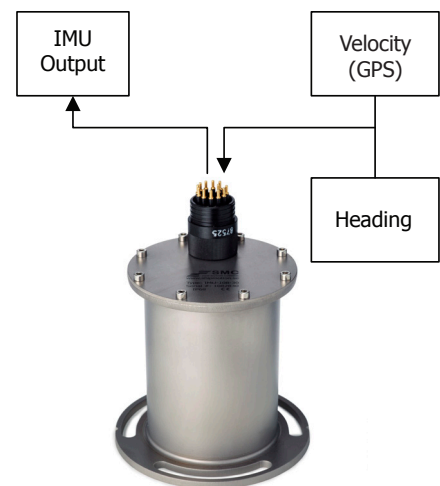


The SMC IMU uses solid state gyros and accelerometers to provide real time motion measurements with high dynamic accuracy even during accelerations. RS232 or RS422 outputs with RS232 velocity and heading inputs for aiding during vessel turns. High quality titanium design, construction and assembly produce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





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	0.03° RMS	0.03° RMS
Resolution Angle	N/A	0.001°	0.001°
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 ² RMS	0.01 m/s ² 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)	Ø89 (mounting plate Ø134, flange for IMU-10x-30 Ø110) x 120mm excl connector		
Weight	~2 kg		
Housing Material	Titanium		
Environmental			
Temperature (absolute max)	0° to +55° Celsius (-10° to +65°); Storage Temperature -40° to +65° Celsius		
Mounting Orientation	Vertical or Horizontal mounting (factory set)		
Power requirements	12 - 30 VDC; 2 W		
MTBF (computed)	50 000 hours		
Depth rating	IP66 (standard); IP68 30 meter depth rated (optional)		
Standard	Complies with the IEC 60945		
Warranty & Support			
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		

