

SMC IMU

Motion Sensors



SMC has developed its IMU range of Motion Sensors to meet the requirements of the marine sector. 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.

The SMC IMU uses solid state gyros and accelerometers to provide real time motion measurements with high dynamic accuracy even during accelerations. State of the art design, construction and assembly produce an IMU with an extremely high reliability in the most demanding marine environment.

Every SMC motion sensor 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 +65 degrees Celsius.

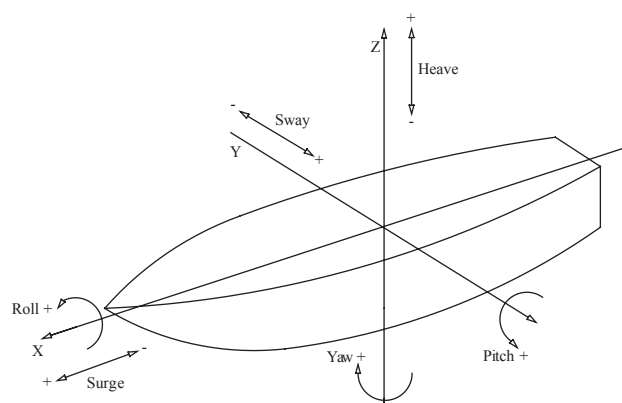
Key Specifications

- Roll & Pitch 0.03° (RMS) Dynamic Accuracy @ $\pm 5^\circ$ amplitude
- Heave 5 cm or 5 %
- Accelerations / Velocities
- Various Industry Protocols NMEA
- 2 years warranty

Complete Package

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

The SMC IMU is available with IP66 rating as default and with depth rating as an option.



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
Surge / Sway	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/Surge/Sway	0.01m	N/A	0.01m
Angle range Roll/Pitch	± 30°	± 30°	± 30°
Heave/Surge/Sway range	±10m	N/A	±10m
Heave/Surge/Sway 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

Motion Sensor Setup Software	The Motion Sensor is shipped with SMC setup windows software allowing on site setup
Output Signal Protocol	Multiple, user selectable Output Protocols ASCII NMEA and binary
Communications Interface	RS422 / RS232 Analog with remote converter (optional)

Physical

Dimensions (W x H)	Ø89 (mounting plate Ø134) x120mm excl connector
Weight	~2 kg
Housing Material	Titanium

Environmental

Operating Temperature (absolute max)	0° to +65° Celsius (-10° to +70°)
Storage Temperature	-40° to +100° Celsius
Mounting Orientation	Vertical or Horizontal mounting (factory set)
Power Supply	12 - 30 VDC
Power Consumption	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
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