SMC-10 Range
4th Generation Motion Reference Units

The 4th Generation of the SMC-10 range of Motion Reference Units has been designed to meet the requirements from the offshore, hydrographic and marine industry. The SMC-10 range provides high accuracy motion measurement data in dynamic environment in all areas from small vessels to large rigs in all weather conditions.

Application
Development over 20 years has produced a Motion Reference Unit for applications from Active Heave Compensation Crane systems, Dynamic Positioning systems, Helideck Monitoring and other various Roll, Pitch and Heave motion applications. The Motion Reference Unit data is suitable for any marine operation that requires attitude determination, motion compensation or dynamic positioning. The SMC Motion Sensors provide high accuracy motion measurements in all dynamic environments.

Function
Motion sensors or MRUs determine the orientation of an object relative to an inertial frame of reference or another body. The SMC MRU uses 3 accelerometers and 3 solid state MEMS gyroscopes which are integrated with a built-in multi-core processor, to output accurate real time pitch, roll and heave data with high dynamic accuracy when accelerations are present, in industry standard formats.

Calibration
All SMC-10 Range of Motion Sensors are individually calibrated and tested with the use of a rate table with a controlled temperature chamber.

Communication
The SMC Motion Reference Units communicates over multiple Ethernet TCP Client/Server, UDP and Modbus connections and RS232/RS422 Serial communication. The SMC MRU accepts serial velocity and heading inputs for aiding purposes and 1PPS for time aiding.

Standard Supply
The SMC Motion Sensor is supplied with a data connection unit, cables and windows-based user configuration software.

Key Features
- Roll & Pitch 0.03° RMS, Heave 5 cm or 5 %
- Web Interface
- 3 Measurement Points
- 200 Hz Output Rate
- Serial and Ethernet UDP, TCP, Modbus
- Custom and Industry Standard Protocols
- 2 years Warranty

Environmental
The SMC-10 motion reference units are available as IP66 surface or IP68 submersible versions in a titanium casing. The durable construction ensures a Motion Sensor with an extremely high reliability in the most demanding marine environment.

About SMC
SMC is an ISO9001:2015 quality management certified company, manufacturing motion reference units, weather instruments and system integration software packages, such as Helideck Monitoring and Motion Monitoring systems, for the global marine industry.

Specification SMC-10 Range, 4th Generation

		SMC-106	SMC-107	SMC-108
Model Features	Roll / Pitch	N/A	Yes	Yes
	Accelerations	N/A	Yes	Yes
	Heave	Yes	N/A	Yes
Performance	Roll & Pitch Accuracy @ ±5° simultaneous roll and pitch	N/A	0.03° RMS	0.03° RMS
	Angle range Roll/Pitch	± 30°	± 30°	± 30°
	Heave Accuracy	5cm or 5%	N/A	5cm or 5%
	Acceleration accuracy	N/A	0.01 m/s² RMS	0.01 m/s² RMS

Communication

Ethernet: 100 Mbit. UDP, TCP/IP and Modbus, 20 user configurable output ports
Com1: RS232 Bi-Directional
Com2: RS422 Bi-Directional
Com3: RS232 Bi-Directional
Com4: RS232 Bi-Directional
Com3 and Com4 can be combined into 1x RS422

Velocity and Heading input formats RMC, RMA, VTG, VHW, GGA, ZDA, HDT, HDG, 1PPS
SMC Configuration PC software included and Built-In Web Interface
User selectable and User configurable Output Protocols
User selectable Output Rate 1-200hz

Physical

Dimensions (W x D x H) 134 x 134 x 85mm excl connector
Weight ~1.7 kg
Housing Material Titanium

Environmental

Temperature -20° to +55° Celsius, outside 0° to +55° Celsius, 0.1° angle performance
Storage Temperature -40° to +65° Celsius
MTBF (computed) 50 000 hours
IP66 as standard; IP68 30 meter depth rated optional
Mounting on Horizontal surface

Electrical

Power requirements 12 - 30 VDC; 4 Watts
Standard Complies with the IEC 60945

Warranty & Support

2-year Hardware & Software Warranty
Free Technical & Hardware support