

# 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 Motion Sensor 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.

### 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
<b>Model Features</b>			
Roll / Pitch	N/A	Yes	Yes
Accelerations	N/A	Yes	Yes
Heave	Yes	N/A	Yes
<b>Performance</b>			
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/s <sup>2</sup> RMS	0.01 m/s <sup>2</sup> RMS
<b>Communication</b>	<p>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</p> <p>Velocity and Heading input formats RMC, RMA, VTG, VHW, GGA, ZDA, HDT, HDG            SMC Configuration PC software included and Built-In Web Interface            User selectable and User configurable Output Protocols            User selectable Output Rate 1-200hz</p>		
<b>Physical</b>	<p>Dimensions (W x D x H) 134 x 134 x 85mm excl connector            Weight ~1.7 kg            Housing Material Titanium</p>		
<b>Environmental</b>	<p>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</p>		
<b>Electrical</b>	<p>Power requirements 12 - 30 VDC; 4 Watts            Standard Complies with the IEC 60945</p>		
<b>Warranty &amp; Support</b>	<p>2-year Hardware &amp; Software Warranty            Free Technical &amp; Hardware support</p>		

