sMRU

Norwegian Subsea

NORSUB Motion Reference Units - Subsea MRU

HIGH PERFORMANCE
COMPACT & RELIABLE

0.01-0.05 RMS°

5 CM / 5 %

6000 m

NORSUB Subsea MRUs

High performance 6 DoF motion sensor

NORSUB Motion Reference Units (MRU) are high performance, compact and affordable. NORSUB MRUs use state-of-the-art MEMS technology and advanced sensor fusion algorithms. This results in accurate and reliable roll, pitch, yaw, surge, sway and heave position and velocity measurements. The performance is great also during horizontal accelerations and coupled motions.

Easy interfacing

The NORSUB MRU SUBSEA comes in a waterproof titanium housing with ethernet and serial ports. Software upgrades are free of charge. A wide range of industry standard and custom protocols are included for easy interfacing to other systems. The MRU can be delivered with custom length cables and desired connector at your end.

Tailormade for subsea use

NORSUB MRU SUBSEA is ideal for use in subsea applications such as riser motion monitoring, ROV/AUV or subsea surveys. The Subsea MRU is a very compact motion sensor that is depth rated to 6000 m. The small size and footprint make it easy to install almost anywhere. The high performance in irregular motions makes it ideal for use in real sea conditions.

An MRU for your needs

A high-end magnetometer can be included in the MRU to provide accurate magnetic heading. The Subsea MRU comes in three different versions: 3000, 6000 and 9000 models to accommodate for different accuracy requirements and budgets.

Technical Specifications

PERFORMANCE				
PARAMETER	MRU 9000 SUBSEA	MRU 6000 SUBSEA	MRU 3000 SUBSEA	REMARKS
Roll & Pitch	+/- 0.01°	+/- 0.02°	+/- 0.05°	RMS (dynamic)
Heave (real-time)	5.0 cm or 5.0 %	5.0 cm or 5.0 %	5.0 cm or 5.0 %	Whichever is greater
Heading (optional)	+/- 0.5°	+/- 0.5°	+/- 0.5°	Magnetic heading
Rotation speed range	+/- 450°/s	+/- 450°/s	+/- 150°/s	-
Acceleration range	+/- 10 g	+/- 4 g	+/- 3 g	-
Output frequency	0-100 Hz	0-100 Hz	0-100 Hz	Adjustable output frequencies

POWER & INTERFACE				
PARAMETER	MRU 9000 SUBSEA	MRU 6000 SUBSEA	MRU 3000 SUBSEA	REMARKS
Power consumption	6 W	6 W	6 W	-
Supply voltage	9-36 V DC	9-36 V DC	9-36 V DC	24 V DC nominal
Internal storage	32 GB	32 GB	32 GB	-
Ports	Ethernet, RS-232 or RS-485 (422)	Ethernet, RS-232 or RS-485 (422)	Ethernet, RS-232, or RS-485 (422)	-
Connector	SubConn 8 pins	SubConn 8 pins	SubConn 8 pins	Micro circular series
Protocols	NMEA, ASCII, Binary, Atlas, Gyrocompas 1, Ifremer Victor, MDL, Simrad EM 3000, SMCA, SMCC, TSS1 ++			Wide range of protocols included, see separate list

PHYSICAL CHARACTERISTICS				
PARAMETER	MRU 9000 SUBSEA	MRU 6000 SUBSEA	MRU 3000 SUBSEA	REMARKS
Weight	1.6 kg	1.6 kg	1.6 kg	Titanium housing
Footprint (L X B)	7.6 cm X 7.6 cm	7.6 cm X 7.6 cm	7.6 cm X 7.6 cm	-
Height	16.5 cm	16.5 cm	16.5 cm	-
Depth rating	6000 m	6000 m	6000 m	-
Other options	2 wire RS-485 is available.			
Application examples	Riser monitoring, BOP monitoring, ROV/AUV, Subsea surveys, etc.			

About Us

Norwegian Subsea delivers high performance Motion Reference Units (MRU) and motion sensors for marine, subsea and land use. Our products combine MEMS sensor technology and sensor fusion algorithms to give accurate and reliable motion, velocity and acceleration measurements for control and monitoring applications.

Norwegian Subsea was founded in 2014. Today, we are a fast-growing supplier of motion sensors to customers worldwide. We deliver motion sensors to satisfied customers in industries as diverse as ship motion monitoring, hydrography, green energy and subsea oil production.

Our mission is to create better and more affordable motion sensors for users in marine, land and subsea industries. We do this by combining advanced sensor fusion algorithms with high quality hardware and the latest MEMS sensors. Our sensors are thoroughly put to test in state-of-the-art labs as well as in the field.

Norwegian Subsea is headquartered in Oslo, Norway.

Norwegian Subsea

Hoffsveien 21, 0275 Oslo, Norway
info@norwegian-subsea.no
www.norwegian-subsea.no