

NORSUB Motion Reference Units - eMRU

HIGH PERFORMANCE PLUG & PLAY



0.01-0.05 RMS°



5 CM / 5 %



IP65

NORSUB Ethernet 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.



Plug & play ethernet interface

NORSUB Ethernet eMRUs are plug & play due to the standard RJ 45 ethernet connector with passive power over ethernet (PoE). This makes cabling very fast & easy. A wide range of industry standard and custom protocols are included for compatibility with other systems.



Tailormade for marine use

NORSUB MRUs are ideal for use in marine applications such as motion compensation of sonars, active heave compensation of offshore cranes, helideck monitoring, DP systems and motion compensation of wave radars, gangways and offshore installations. The high performance in irregular motions makes it ideal for use in real sea conditions.



An MRU for your needs

The eMRU is dust and splash proof and is suitable for mounting indoors or inside a control box. The ethernet 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 eMRU	MRU 6000 eMRU	MRU 3000 eMRU	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
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 eMRU	MRU 6000 eMRU	MRU 3000 eMRU	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	Ethernet	Ethernet	-
Connector	RJ45	RJ45	RJ45	Passive PoE
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 eMRU	MRU 6000 eMRU	MRU 3000 eMRU	REMARKS
Weight	0.55 kg	0.55 kg	0.55 kg	Aluminium housing
Footprint (L X B)	12.0 cm X 5.7 cm	12.0 cm X 5.7 cm	12.0 cm X 5.7 cm	-
Height	5.3 cm	5.3 cm	5.3 cm	-
Depth rating	IP 65	IP 65	IP 65	-
Application examples	Condition monitoring (wind turbine structures, bridges, ships, etc.) Motion control systems (gangway motion control, active heave compensation, dynamic positioning, etc.) Foil and fin stabilization systems			

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.



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