



## Datasheet

# MRU3000 Motion Reference Unit

This Motion Reference Unit gives high performance, is compact and affordable. It uses state-of-the-art MEMS technology and advanced sensor fusion algorithms to provide real-time roll, pitch and heave at high frequencies.

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.

It comes in a waterproof, marine housing with ethernet, serial ports and free software upgrades included. A wide range of industry standard and custom protocols are included for easy interfacing to other systems.

### Features

- High accuracy sensor
- Wide range of available protocols
- Very compact
- High reliability in every environment
- Marine aluminium housing
- Light weight
- Ports: Ethernet, RS-232, RS-485 (422)
- Standard marine cable length of 10 m, junction box, power supply, manual and configuration software
- IP-68 housing

## General

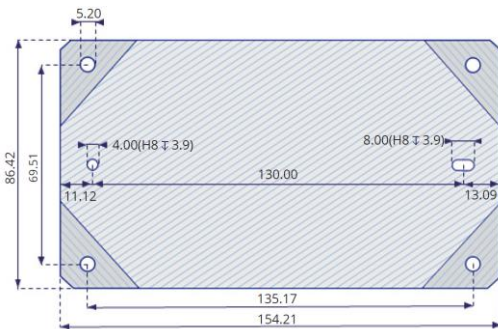
This MRU (Motion Reference Unit) marine outputs roll, pitch, yaw, heave, surge and sway measurements at configurable output rates up to 100 Hz.

The MRU consists of a high-end MEMS 6 DOF IMU (3 x gyroscopes and 3 x accelerometers) and a processing unit where the roll, pitch, yaw, surge, sway and heave are calculated using advanced sensor fusion algorithms.

The dimensions of the MRU are length: 154.2 mm, width: 86.4 mm and height: 65.7 mm.



The footprint of the MRU is seen in below figure, dimensions are in millimeters. This shows the 4 mounting holes and the 2 alignment holes/slots on the center line. The MRU is mounted to a solid surface using 4 x M5 screws. 4 mm diameter alignment dowels are recommended for best alignment during installation.



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## Data summary

### Power and interfaces

- Supply voltage: 24 VDC Nominal
- Consumption: 6 W
- Internal storage: 32GB
- Protocols: NMEA, ASCII, Binary, Atlas, Gyrocompas 1, Ifremer Victor, MDL, Simrad EM 3000, SMCA, SMCC, TSS1 ++

### Output

- Ethernet, RS-232, RS-485 (422)

### Dimensions, as per sketch

- Weight 1.2 kg

### Performance

- Roll & Pitch:  $\pm 0.05^\circ$  RMS (dynamic)
- Heave (real-time): 5.0 cm or 5.0% whichever is greater
- Heading:  $\pm 0.5^\circ$  (magnetic heading), (optional)
- Rotation speed range:  $\pm 150^\circ/s$
- Acceleration range:  $\pm 3g$
- Output frequency: 100 Hz (adjustable)

MRU3000 installed in function of an Observator HMS



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