

EARTH SENSING ELECTROMAGNETIC COMPASS

MD53A/T

- An electromagnetic compass which senses the magnetic field of the Earth
- Based on a fluxgate coil device with no moving parts
- Provides digital NMEA 0183 heading data when used with the MARINE DATA MD97/8 Compass Sensor Interface
- Vessel heading may be transmitted to any location on the vessel and displayed with a MARINE DATA compass repeater
- Magnetic corrections are applied with the MARINE DATA MD93/8 Variation and Deviation Corrector
- Rugged, low-maintenance housing
- Suitable for workboats, tugs, commercial craft, pleasure craft and fishing vessels

The MD53A/T Earth Sensing Electromagnetic Compass from Marine Data.



MARINE DATA

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SPECIFICATIONS

Physical

- Weight: 1.6kg
- Dimensions: 142mm overall width; 126mm overall length; 148mm overall height
- Mounting: Bulkhead, floor or deckhead
- Connections: 5-way screened cable; captive at the sensor body with Triad™ type connector
- Construction: Aluminium alloy enclosure; aluminium alloy mounting bracket
- Finish: Light Admiralty Grey (BS381C-697)

Electrical

- Power supplied by the MARINE DATA MD97/8; 10V 500Hz
- Sensor type: Magnetic fluxgate coil (Earth sensing)
- Data Input: Earth's magnetic field
- Data Output: 3 phase positional signal

Operational

- Performance: $\pm 1^\circ$ (static)
- Follow-up rate: Instantaneous (limited by the processor unit)
- Display: None; requires an external display. Example: a MARINE DATA Compass Repeater
- Magnetic Flux Density: Operates between 0.12 & 0.38 Gauss (CGS); 12×10^{-6} & 38×10^{-6} Tesla (SI)

Environmental

- IP rating: Splashproof to IP65
- Temperature: -25°C to $+70^\circ\text{C}$

Additional Information

- Installation: As close to the vessel's metacentre as practicable
- The MD53A requires an externally-generated excitation signal to drive the coil

MD53A/T - Required Equipment

- The MARINE DATA MD97/8 Compass Sensor Interface is required to drive the fluxgate coil of the MD53A/T and provide a digital NMEA 0183 heading output (HDT, HDG, HDM). This digital system may be used to drive MARINE DATA compass repeaters as part of a Transmitting Magnetic System (TMC)
- The MARINE DATA MD93/8 Variation and Deviation Corrector is required for the electronic correction of magnetic variation and magnetic deviation. The MD93/8 is also used to damp any fluctuations in vessel heading
- Independently tested to IEC60945: 2002 by TÜV Product Service Ltd.

The CGS (Centimetre Gram Seconds) unit of magnetic flux density (B) is the Gauss. The SI unit of magnetic flux density (B) is the Tesla (T); 1 Gauss = 0.0001 Tesla. Precise electromagnetic definitions are outside the scope of this document

Triad is a trademark of Tyco Electronics Corporation in the United States and in other countries

XLR is a generic term for a range of circular multipole connectors



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