

# NASA MARINE LTD

## NMEA COMPASS SENSOR

### INSTALLATION OF SENSOR

The sensor measures the direction of the Earth's weak magnetic field, and so is sensitive to other magnetic fields which can affect the unit's accuracy. It should therefore be positioned carefully. The sensor is sealed to CFR 46 (waterproof). Do not position where the sensor could become submerged.

Select a position as far as possible away from large ferrous objects such as engines, and items such as DC motors or loudspeakers which have powerful permanent magnets in them. Check also for small ferrous objects close to the mounting location such as screws, nails, hinges etc. These can become magnetised and cause errors. When a likely location has been found, a check for reasonable accuracy can be made with a hand bearing compass to confirm its suitability.

The magnetic sensor itself is fully gimballed within the housing for 30 degrees of pitch and roll. To accommodate the maximum pitch and roll motions, mount the sensor as near to horizontal as possible. For best performance in rough weather conditions, it is also advisable to mount the sensor in a position (usually amidships) that minimises lateral accelerations due to pitch and roll. Avoid mounting the sensor high above the water line because doing so also increases pitch and roll acceleration.

Position the sensor so the two arrows on the top are pointing forward. It is important that the sensor is aligned within 30° of the vessel's axis before doing the final compass alignment. Mark and drill the pilot holes for the mounting screws. Now mount the sensor carefully in position and tighten using non-magnetic brass mounting screws when final alignment is finished. (If you are using a Clipper Compass display there is an engineering electronic error correction routine available.)

Connect the silver wire to supply negative. Connect the red wire to supply positive (voltage 9 to 15 Volts) the blue wire is the NMEA output, connect to the NMEA input of receiving device. (Reference supply negative)

The Compass sends NMEA 0183 HDG sentence once a second.