



OceanServer 3 Axis Digital Compass

OS1500 Solid State Tilt Compensated Compass with Roll, Pitch and Depth Measurement

Data Sheet

The OS1500 is an extremely small form factor (1" x 1") three axis, tilt compensated digital compass. The the compass is connected via a RS232 Serial connection. The OS1500 provides precise heading, roll and pitch data ideal for rapid attitude measurement. The OS1500 supports the direct connection of an amplified pressure transducer and the ability to convert the pressure data to depth in water.

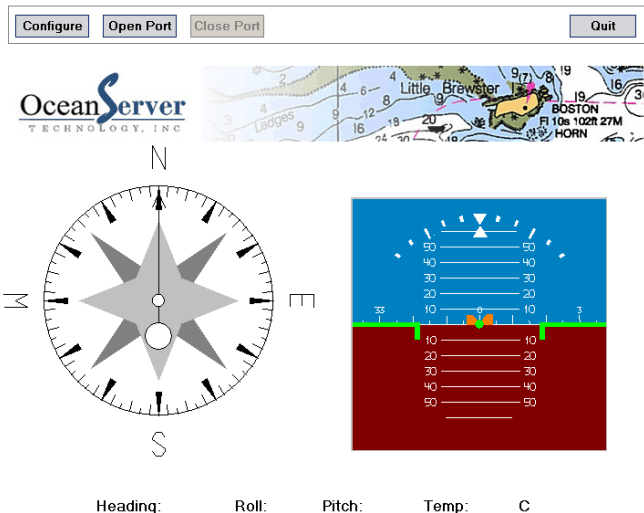


RoHS Compliant

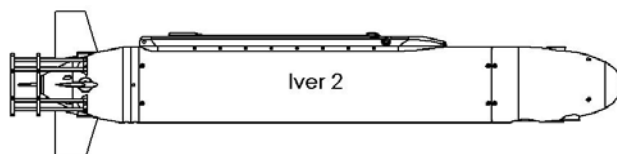
Specifications

- > **Ultra Low Cost Design**
- > **Size : 1.0" x 1.0" PCB**
- > **Precision Compass – Tilt Compensated**
- > **3 – Axis Honeywell Magneto Resistive Sensors**
- > **2 – Axis Memsic MEMS Accelerometer for Roll and Pitch Angle Measurement**
- > **Update Rate Programmable from .1 to 20 Hz**
- > **Simple to use ASCII Interface includes Hard-Iron Calibration and Data Configuration**
- > **24-bit A/D Converters with Digital Filters**
- > **Solid State Components have 50,000 G Survival Rating**
- > **Low Power Circuit Consumption (Power: 3.3V regulated, 3.3-5V unregulated)**
- > **Accuracy: 1 Degree Azimuth, Resolution: 0.1 Degree**
- > **Roll and Pitch: 0.1 Degree Resolution**
- > **Supports Directly Connecting a Standard Pressure Sensor to Report Depth in Water for Marine Applications**

OceanServer compasses include Microsoft Windows®, Mac and Linux compatible software for evaluation and testing. The software installation kit includes a serial cable with a DB-9 connector and 9V battery connector for quick connection between the compass and your system. The compasses can also be connected to a host system using Microsoft Hyperterm®.



Various Applications ~ Robots, Navigation, Instrumentation, Survey



Additional Sensor Information

Includes 3 axis magnetic field sensors utilizing Honeywell HMC1052 chipset for X and Y field sensing and HMC1051Z for Z-axis sensing. The measurement of the roll and pitch angle of the compass is accomplished by using a Memsic 2-axis MEMS Accelerometer. The device measures the acceleration of the force of gravity downward in the X and Y directions. The design also supports the option for direct connection to a pressure sensor for measurement of the depth. The compass will report depth in the compass strings. Compatible pressure transducers operate in the 0.5V – 4.5V direct output (such as the MSI MSP-340).

Key Specifications for Magnetic Sensors

Max Field Range	+/- 6	Gauss
Typical Resolution	120	uGauss
Typical Linearity	0.1	%FS
Typical Repeatability err	0.1	%FS
Max X,Y sensor Orthogonally	0.01	degrees
Bandwidth	5	Mhz