

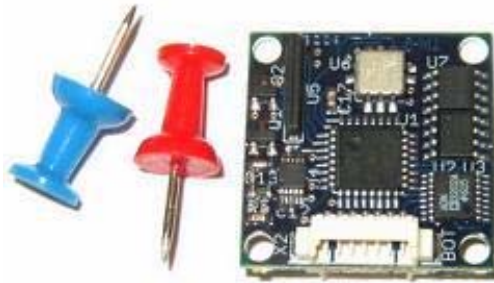


## ***OceanServer Serial Digital Compass***

### **OS1000 Solid State Tilt Compensated Compass with Roll, Pitch and Depth Measurement**

#### ***Data Sheet***

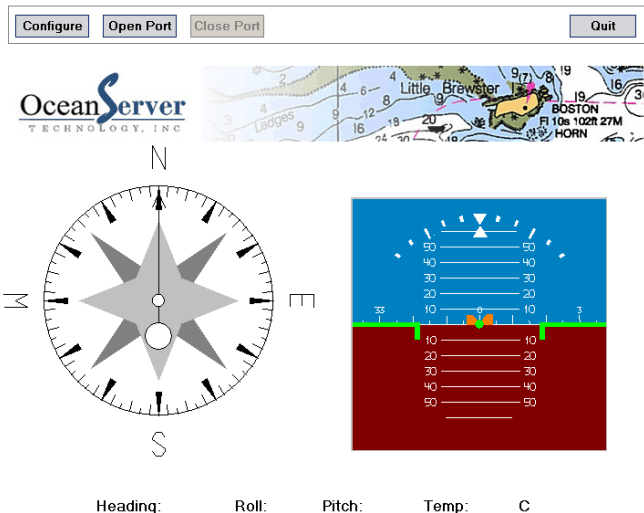
The OS1000 is an extremely small form factor (1" x 1") three axis, tilt compensated digital compass. The the compass is connected via a RS232 Serial connection. The OS1000 provides precise heading, roll and pitch data ideal for rapid attitude measurement. An optional feature of the OS1000 is it's ability to directly measure pressure using a standard pressure transducer and convert it to depth in water.



#### ***Specifications***

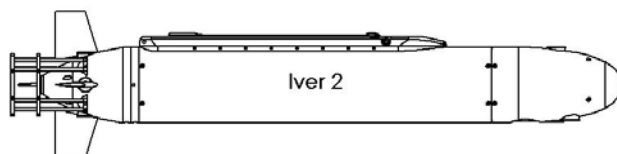
- > **Ultra Low Cost Design**
- > **Size : 1.0" x 1.0" PCB**
- > **Precision Compass – Tilt Compensated**
- > **3 – Axis Honeywell Magneto Resistive Sensors**
- > **2 – Axis Memsic MEMS Accelerometer for Roll and Pitch Angle Measurement**
- > **1-9 Hz Continuous Update Rate**
- > **Simple to use ASCII Interface includes Hard-Iron Calibration and Data Configuration**
- > **Digital Filters, Dampening**
- > **Direct Serial Connection**
- > **Low Power Circuit Consumption (Operates on 5-18V DC Power Input)**
- > **Accuracy: 1 Degree Azimuth, Resolution: 0.1 Degree**
- > **Roll and Pitch: 0.1 Degree Resolution**
- > **Option for 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®.



**Windows Evaluation Program**

**Applications ~ Robots including marine systems: AUV, ROV or Profiler**



**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 present design uses a pressure device from MSI Sensors that outputs from 0.5V for 0 PSI to 4.5V for 100 PSI.

**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