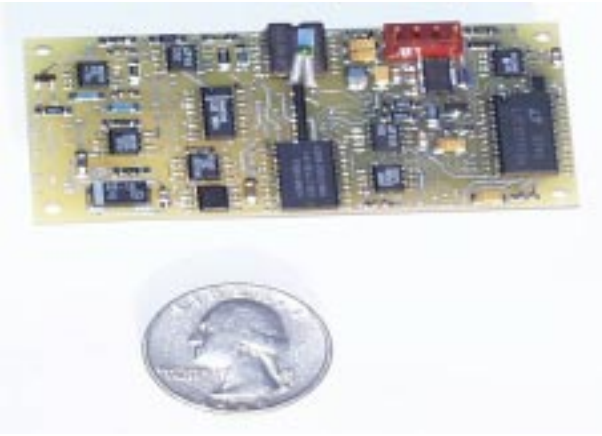
OSTAR COMPASS

Electronic 3-Axis Compass with 2-Axis Tilt Sensor



FSI's OSTAR Compass Sensor provides high-accuracy magnetic vector (Heading), gravity vector (Tilt) and temperature measurement capability in a compact, low-cost package. The innovative card set with state-of-the-art sensors is designed specifically for integration into a variety of host instruments.

The 3-axis magnetometer achieves very low power consumption by using solid-state magneto-resistive sensors combined with newly developed silicon micro-machined 2-axis tilt sensors. All components are fully temperature compensated. The X and Y axes of the magnetometer are parallel to the X and Y axes of the tilt sensor. Small errors in alignment are determined during calibration and numerically corrected by the on-board processor. The electronics approach makes the compass essentially insensitive to changes in the magnetic properties of the sensors.

FEATURES

- **High Accuracy:**
  - **Direction ± 2 degrees**
  - **Tilt ± 0.2 degrees**
- **Low Power, 0.045 amps**
- **Direct Digital Output of:**
  - **HEAD – compass heading**
  - **Tx – x tilt component**
  - **Ty – y tilt component**
  - **Temperature**
- **RS–232, RS–485 Output Options**
- **User Hard Iron Calibration Routine**
- **On-Board EEPROM Constant Storage**
- **Sampling to 3 Hz**

Excellence In Instrumentation

Falmouth Scientific, Inc.

1400 Route 28A, P.O. Box 315 ● Cataumet, MA 02534-0315 ● email: fsi@falmouth.com
Telephone: 508/564-7640 ● Facsimile: 508/564-7643 ● Website: www.falmouth.com

OSTAR COMPASS SPECIFICATIONS

Instrument Parameter Units	Magnetic Vector Direction Degrees	Gravity Vector Direction G's	Computed Heading * Degrees	Computed Tilt Degrees	Temperature Celsius
Range	± 2 Gauss	± 2	0 - 360	0 to 45	-10 to +40
Accuracy	± 0.0010	± 0.040	± 2.0	± 0.20	0.50
Resolution	0.0005	0.005	0.01	0.01	0.01

** Specified @ +/- 40 Degree Latitude Maximum & +/- 15 Degree Tilt*

Power Input	6 - 16 VDC @ 45 mA
Alignment	Sensors to Card Mounting Holes ± 0.5 Degrees
Sampling Rate	3 Samples / Second Max
Turn On Time	1.5 Seconds Power to 1st Data
Output	RS-232 or RS-485 Serial Data
Format	ASCII Encoded Data In Physical Units
Output Data Types	Hx, Hy, Hz, Heading, Tx, Ty, Tilt, Temperature User Selectable
Baud Rates	9.6 K or 19.2 K Baud
Ouput Filter	Boxcar, User Settable 2 - 1000 Samples
Output Selection	Continuous, Scaled, Raw Counts
Calibration	Initial Factory Computer Controlled Helmholtz & Tilt
Field Calibration	User Hard Iron Rotation Calibration with Quality Factor
Dimensions	Printed Circuit Card, 35 mm x 70 mm x 10mm high, Four Each Mounting Holes 2.54 x 2.54 mm in from corners with 4-40 standoffs
Connector	Molex 4 pin housing with lock, #2695

Specifications Subject to Change without Notice

Excellence In Instrumentation

1400 Route 28A, P.O. Box 315 ● Cataumet, MA 02534-0315 ● email: fsi@falmouth.com
Telephone: 508/564-7640 ● Facsimile: 508/564-7643 ● Website: www.falmouth.com