MODEL 545TB
HEADING SENSOR

FEATURES

- Operates in dynamic environments with 360 degrees continuous control
- Titanium housing
- 0.982" (33mm) diameter
- 2500 psi pressure rating
- TTL digital and analog output

APPLICATIONS

- Towed Sonar Arrays
- Seismic Streamers
- Buoy Orientation
- Magnetic Compassing

The Model 545 series of high performance, fully calibrated, narrow diameter heading sensors are ideally suited for sonar array and seismic streamer applications.

Typical versions (others available)
545C RS422
545TB Titanium housing
545JH RS232

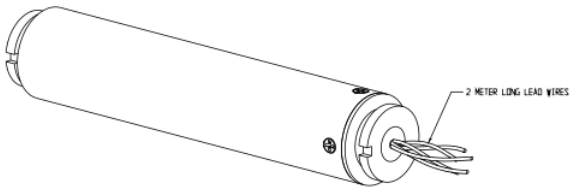
The Model 545 series sensors utilize a solid state "strapdown" configuration that avoids the performance limitations of typical gimbaled systems and offers improved reliability.

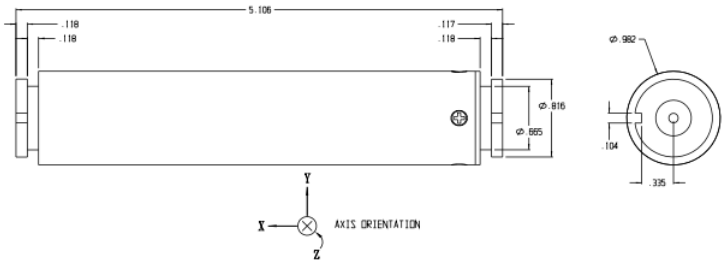
A 3-axis fluxgate magnetometer and a 3-axis MEMs accelerometer are combined with digital signal processing electronics and fully integrated within a small diameter pressure rated housing.

The digital signal processor samples and converts the internal sensor signals to 16-bit digital data and automatically compensates for any temperature and misalignment effects.

Factory calibration of scale factor, bias and misalignment angles is achieved by placing the instrument in high precision fixtures that apply rotation and magnetic fields. Scale factor and bias coefficients are measured over the operating temperature range of the sensor.

The calculated roll, pitch and azimuth angles are provided on an anlog serial data link for data transfer rates of up to 38400 baud.





APPLIED PHYSICS DEFENSE

HEADQUARTERS
425 Clyde Avenue Mountain View, CA 94043

OFFICE 650.965.0500
EMAIL service@appliedphysics.com

ELECTRICAL

Input Voltage	±8 V
Current Draw	+8V 40mA -8V 20mA
Logic Level	TTL/Analog
Baud Rate	User Programmable up to 38400 baud
Protocol	User Selectable: ASCII or binary
Analog Heading Outputs (sine, -sine, cosine, -cosine)	2V Full Scale

ENVIRONMENTAL

Operating Temperature Range	0°C to +45°C
Storage Temperature Range	-55°C to +160°C
Shock	1000 G 1 ms half sine wave
Vibration	10 G RMS random 50 Hz to 500 Hz
Operational Pressure Rating	1500 psi
Survival Pressure Rating	2500 psi

PERFORMANCE

Azimuth Accuracy	±1.2°
Inclination Accuracy	±0.5°
Roll Accuracy	±0.5°

PHYSICAL

Outside Diameter (OD)	0.982" (24.9 mm)
Length	5.106" (130 mm)
Weight	3.88 oz (110 g)
Connection	Flying Leads
Housing Material	Titanium
Chassis Material	Aluminum

WIRE COLOR	FUNCTION
RED	+ Voltage In
BLACK	Ground
BLUE	- Voltage In
ORANGE	Sensor TTL Serial In
YELLOW	Sensor TTL Serial Out
BROWN	Reserved
YELLOW/WHITE	Sine Heading +
GREEN	Sine Heading -
PURPLE/WHITE	Cosine Heading +
RED/WHITE	Cosine Heading -

Specifications are subject to change without notice.