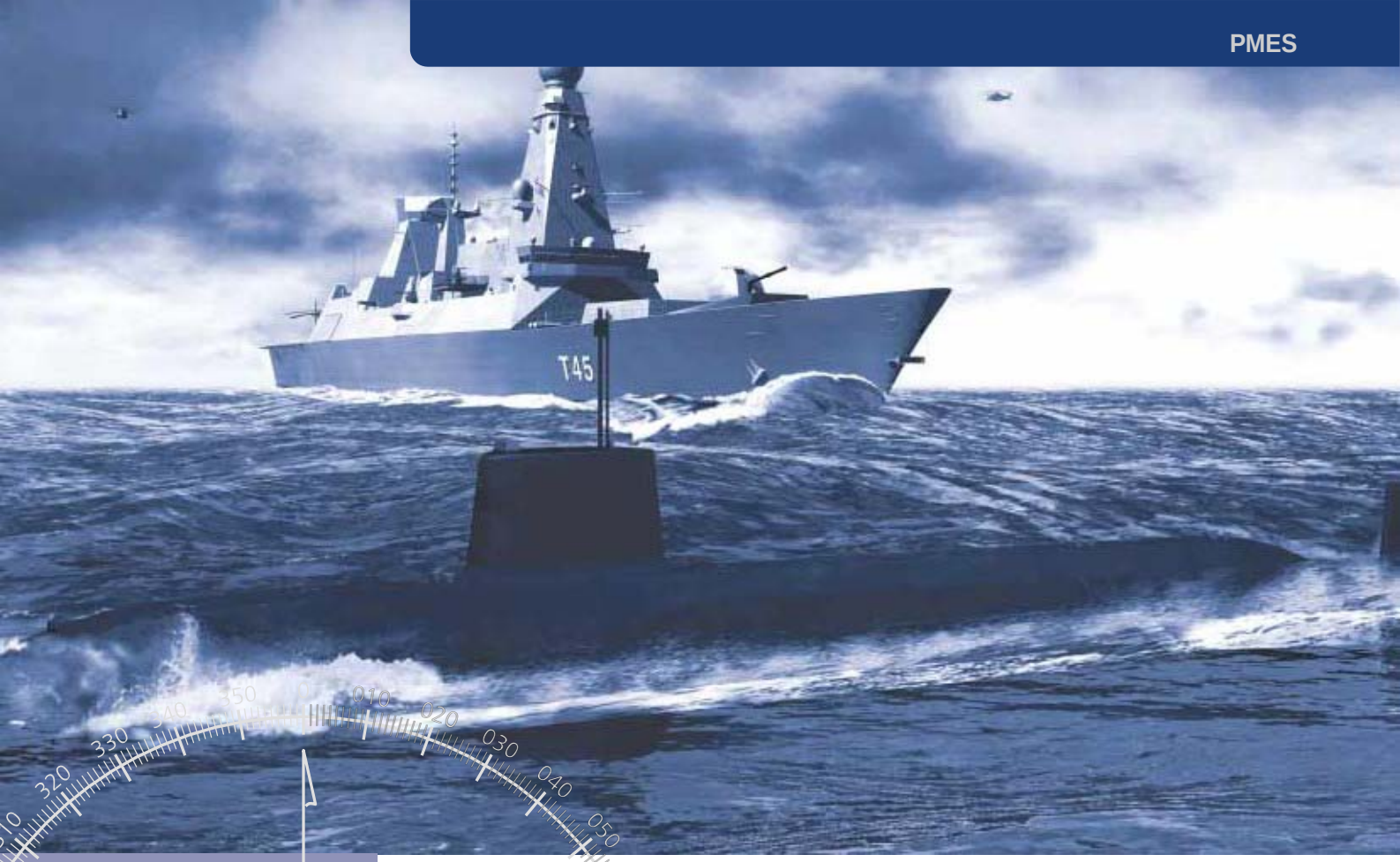

Towed Array Heading Sensor ATAHS MK3

HIGH PERFORMANCE HEADING REFERENCE MEASUREMENT IN A MINIATURE INTEGRATED PACKAGE.

The ATAHS MK3 heading reference sensor is the latest in a generation of precision sensors combining miniature 3-axis fluxgate technology and state of the art MEMS accelerometers.

This high reliability sensor is housed in a hermetically sealed laser welded titanium pressure vessel which is designed for sustained operation in extreme environments.

The sensor provides outputs of: heading reference, three axis magnetic, three axis acceleration and BIT. All processing is performed within the device using a high performance microcontroller to convert sensor data into heading with respect to magnetic north.

The sensor interface has been specifically designed with improved two way digital communication. This allows the update of firmware to be implemented without the need to remove the sensor from the array.

- Heading accuracy better than 0.5º
- Small diameter
- Solid state
- Titanium pressure vessel housing
- Serial Digital Output

Ultra ELECTRONICS

Ultra offers a range of 3-axis strapdown magnetometers for magnetic heading reference applications including:

- Unmanned Air Vehicles (UAV's)
- Underwater Vehicles (ROV's)
- Data Buoys
- Towed Platforms
- Sounding Rockets
- Rotary and Fixed Wing Aircraft

Other magnetic measurements supplied by Ultra include:

- Underwater Electro-Magnetic Sensor Packages
- Magnetic Measurement Instruments
- Magnetic Measurement Ranges
- Multi-Influence Measurement Ranges:
  - Static Magnetic and Alternating Magnetic
  - Static Electric and Alternating Electric
  - Acoustic
  - Pressure
  - Seismic

ATAHS Performance Specification

Digital data interface		
Heading 3-axis magnetic 3-axis accelerometer Bit	Clocked serial interface, two's complement.	
Diagnostics	RS 232	
Performance		
Heading accuracy	Earths Field Dip Angle	V/H*
< 0.5º rms	<67º	up to 2.4:1
< 1.5º rms	67º - 80º	2.4:1 to 5.7:1
< 2.2º rms	80º - 85º	5.7:1 to 11.4:1
Acceleration accuracy	better than ± 20mg	
Resolution	16 bit	
Roll range	360º continuous	
Pitch range	± 20º (360º continuous with degraded accuracy)	
Dynamic Range	± 70 µT Magnetic ± 1.25g Acceleration	
Bit	Verifies magnetometer performance on demand	
Electrical		
Power	±7 to ±10Vdc unregulated at 50mA	
EMC	Meets DEF STAN 59-41 (below decks)	
Environmental		
Pressure rating	100 bar max 350 bar with degraded performance (will withstand and fully recover)	
Temperature	-2ºC to + 35ºC -50ºC to + 85ºC (storage)	
Shock	NES 1004, Half sine 366m/s peak for 25ms	
Vibration	NES 1004, data sheet 25	
Physical		
Diameter	25mm	
Length	130mm	
Weight	150g	
Housing	Titanium	
Connection	Via ten way flying lead (1m in length)	

All performance parameters are quoted after application of correction matrix to measured outputs. Other options are available to suit customer specific requirements

*V= Earth's Vertical Field
H= Earth's Horizontal Field

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