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Model 2685 MIPS

Key features

- Accurate and stable
- Lightweight and portable
- Integrated pitch, roll and heading sensors
- Integrated depth and temperature sensors
- Tested to military standards for compatibility
- Approved for military use

Model 2685 MIPS Overview

The 2685 Mobile Integrated Positioning System (MIPS) is an advanced Ultra Short Baseline (USBL) underwater tracking system.

The MIPS antenna provides a subsea positioning solution in a compact design for use in a Naval environment.

System integration is via a high speed serial link ideal for OEM applications.

The MIPS antenna is deployed from a single point mooring allowing a variety of platforms to be utilised.

Model 2685 MIPS Technical Specification

PHYSICAL SPECIFICATION

Depth Rating	100m
Transceiver Dimensions	510.0mm x Ø100.0mm (including connector)
Transceiver Weight	12.5kg in air, 8.5kg in water
ADDITIONAL SENSORS	
Depth Sensor	10 bar, 0.25% accuracy -10°C to +40°C
Temperature Sensor	1°C resolution -10°C to +40°C
Compass Accuracy	0.5°

Acoustic Specification

Accuracy is based on the correct speed of sound being entered, no ray bending and an acceptable S/N ratio.

Slant range accuracy	0.2m (accuracy dependent on correct speed of sound)
Position accuracy	0.45° drms 1.0% of slant range (acoustic accuracy excluding heading errors)
Frequency Band (MF)	Reception 24 - 30 kHz Transmission 17 – 26 kHz Transmitter power > 187dB ref. 1µPa at 1m
Tracking beam pattern	Hemispherical
Beacon types	Transponders and responders
Interrogation Rate	Internally set or external key

User Interface

Data communication	DS008-9010 Interface protocol
Down link	RS-422, 19,200 baud.
Up link	RS-422, 19,200 baud.
Responder up link	RS-422 drivers/receivers used

Electrical Specification

Power requirements	24-28VDC 2A

Environmental Specification

Temperature	DEF STAN 00-35 Part 3: Issue 4 including temperature shock test.CL14 Operation in water: -4˚C to +32˚C Operation in air: -20˚C to +44˚C Storage temperature: -40˚C to +70˚C High ambient temperature operation in air is for short duration system checks only, thermal protection is fitted and unit will auto shut down.

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Due to continual product improvement specification information may be subject to change without notice.
Model 2685 MIPS/July 2017

Registration No. QU180081a
ISO9001:2015

Vibration	DEF STAN 00-35 Part 3: Issue 4 M1: General Purpose Vibration Test: Deployed or installed in surface ships: Sine sweep M1: General Purpose Vibration Test: Deployed or installed in surface ships: Sine dwell

Test Type	Region	Amplitude (mm pk)	Frequency (Hz)	Duration (mins)
Sine Sweep	Upper deck, Protected Compartment and Hull	0.125	5 to 33	60
Sine Dwell	All	1.250 0.300 0.125	14 23 33	20 20 20

Shock	DEF STAN 00-35 Part 3: Issue 4 M7: Shock Testing for Warship Equipment & Armament Stores: Classical Shock Pulse NCUE – Classical Shock Pulse

	Region	Amplitude (mm pk)	Frequency (Hz)
Pulse Shape	Half Sine		
Pulse Width	10ms		
Acceleration	45g	25g	25g
Duration	1 shock in each direction of each orientation (6 in total)		

Humidity	Operation: 5% to 95% non condensating Storage: 5% to 95% non condensating

Compatibility

EMC	MIL STD 461D tests: CE101, CE102, RE101, RE102, CS101, CS114, RS101, RS103 to an upper limit of 1GHz.* *Subject to power supply.
Magnetic Signature	External housing material is Aluminum Silicon Bronze (NES 834) with a typical relative magnetic permeability of 1.05.

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Reliability

Mean Time Between Failure (MTBF)	Calculations have been performed in accordance to MIL-HDBK-217F (inc. notice 1 & 2), the environmental factor used was Naval Unsheltered. The Quality factor used was 'industrial'. The stress factor applied was 50%, the temperature factor applied was the upper operating condition = 50˚C. Calculated results = 2894 hours. In-service MTBF >20,000, 2009 to date.

Interface Cable

Cable Jacket	Polyurethane jacket
Construction	4 screened twisted pairs (STP)
Diameter	10.8mm approx.
Bend Radius	200mm minimum
Max Length	100m
SWL (Safe working Load)	25kg, (tested to 50kg)
Electrical connector subsea	Souriau 12 contact
Electrical connector – surface	Wire end