



# MARINE MOTION SENSORS

*DYNAMIC ATTITUDE PLATFORMS FOR MARINE APPLICATIONS*

- New solid state angular rate gyro elements
- Enables survey to Class 1 IHO standard
- High dynamic accuracy during vessel turns
- Dynamic roll & pitch accuracy to 0.05°
- Depth rated to 3000m
- Surface versions available
- Plug & play installation
- DMSView intuitive Windows™ control software
- Enhanced aiding algorithm maintains accuracy across wider dynamic spectrum
- Compact size and lightweight
- Flexible orientation
- EMC and CE rated
- User configurable output formats
- Real-time digital & analogue outputs



- Multibeam echo-sounders
- Singlebeam echo-sounders
- Acoustic positioning
- Dynamic positioning
- ROV / AUV attitude measurement
- Helideck monitoring
- Vessel monitoring and control
- ADCP
- Platform monitoring

## Building on achievement - the fourth generation of the world's most successful motion sensor

**TSS DMS** Now in its fourth generation the new DMS leads the world in performance and reliability.

The DMS is designed specifically for the motion measurement needs of the marine industry. Whether it is achieving IHO standard survey from any size of vessel or providing safety critical monitoring of offshore platforms, large vessels, helidecks, cranes and positioning systems. The new DMS provides accurate motion measurement in all sea conditions, incorporating an enhanced external velocity and heading aiding algorithm for improved accuracy during dynamic maneuvers.

All-new solid state angular rate sensors offer high reliability and a revised complementary blending algorithm has proven that the new DMS is the highest performance vertical reference unit ever produced by TSS.

TSS' unique heave algorithm is respected and acknowledged as the world's most accurate. By maintaining a more accurate vertical reference across a wider dynamic

spectrum our heave accuracy is taken to a new level of performance.

DMSView is an intuitive Windows™-based operating program that enables installation, set-up, and integrity checking and monitoring of the sensor. The user can select from a series of frequently used data protocols or configure a bespoke output from a selection of variables.

Despite its compact size the unit is depth rated to 3000m, alternatively surface-mount versions are available. The new unit can also be supplied in various configurations for integration with towed vehicles and other bespoke applications.

As with all TSS systems the DMS is certified to meet all current and anticipated European legislation for electromagnetic compatibility and electronic emissions.

Backed by the largest global support network of any manufacturer, TSS has complete repair, test and calibration facilities in the UK and the USA aided by factory trained service engineers on every continent.

**TSS TECHNOLOGY IN MOTION**



# MARINE MOTION SENSORS

Technical Specifications				
Technical Specifications		Heave	Roll & Pitch	
Accuracy (preliminary)	Model	All	DMS-05	DMS-10
	Static	5cm or 5% whichever is greater	0.025°	0.05°
	Dynamic	Period - 0 to 20s	0.03° for a ±5° amplitude 0.05° for a ±30° amplitude	0.10°
Range		±10m	±60° roll and pitch	
Resolution		1cm	Digital - 0.01°    Analogue - 12 bit	
Bandwidth		0.05 to > 30 Hz	0 to > 30 Hz	
Data Output Rate		Digital - Up to 200 Hz	Analogue - 500 Hz	
Available Output Parameters		Adjustable data packet output rate down to 1hz Heave; roll; pitch; remote heave; angular rate X,Y,Z - acceleration X,Y,Z (body frame); angular rate east, north, up - acceleration east, north, up (geographical frame); IMU temperature; surge; sway; sensor status; external speed; external heading; UTC time;		
Dimensions		210mm by 110 diameter ( excluding connector and mounting plate )		
Weight		< 5kg ( In water @ 2kg )		
Temperature Range		0° to 55°C operating    -20° to 70°C storage		
Power Requirement		10 - 36V , maximum 14W		
Velocity input packet formats		NMEA0183 ( requires VTG & GLL or GGA ); TSIP; Doppler Speed Log		
Heading input packet formats		NMEA 0183; SGB; Robertson; Sperry LR 40/60		
Depth rating		3000m standard; 6000m & Surface-mount available as bespoke items		
Environmental		Shock (survival) - 30g peak 40ms half-sine; Vibration (operating) 30mm/s <sup>2</sup> or 0.2mm, 7-300 Hz		
Available output formats		USER CONFIGURABLE via DMSView operating software, in addition to many bespoke manufacturers interfaces. TSS can configure specific data packets as required by clients in addition to the standard TSS and other manufactures specifications		
Interface		Digital; RS232 or RS422 (software selectable)    Analogue; Configurable		
Deliverables		DMS motion sensor, transit case, 5m umbilical cable, manual, DMSView CD-ROM, calibration certificate; vertical and horizontal mounting plates		
Options		Umbilical Cable - 5 to 1000m, Remote Repeater (digital and analogue outputs, external heading and GPS inputs)		
Other Data		MTBF (computed) - 50,000hr		

**Distributed by: Del Norte Technology Ltd**

**Unit 20 BSS-South Marston,  
Hunts Rise, South Marston Park,  
SWINDON, Wilts, UK**

**T: +44 (0)1793 827982  
F: +44 (0)1793 827984  
Email: [lsmith@del-norte.co.uk](mailto:lsmith@del-norte.co.uk)**