

# TSS DYNAMIC MOTION SENSORS



The Research Vessel Prince Madog.  
Picture courtesy of VT Ocean Sciences.

## Features:

- Dynamic roll and pitch accuracy to 0.05°
- Depth rated to 3000m (optional 6000m)
- Solid state angular rate gyro
- Survey to Class 1 IHO standard
- High dynamic accuracy during vessel turns

## Benefits:

- DMSView intuitive control software
- User-configurable outputs
- Real-time digital and analogue outputs
- Compact and lightweight

The DMS range of motion sensors has been 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, helicopter landing decks, cranes and positioning systems, the DMS provides accurate motion measurement in all sea conditions.

Incorporating an enhanced external velocity and heading aiding algorithm for improved accuracy during dynamic manoeuvres, the solid state angular rate sensors offer reliability and a complimentary blending algorithm has proven that the DMS is the highest performance vertical reference unit ever produced by VT TSS.

The DMSView software programme is an intuitive Windows™-based operating programme 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.

The DMS is rated to 3000m as standard with 6000m available on request. The sensor can be supplied in various configurations for integration with towed vehicles and other bespoke applications. As with all VT TSS systems, the DMS is certified to meet all current and anticipated European legislation for electromagnetic compatibility and electronic emissions.



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TECHNICAL SPECIFICATIONS					
Dynamic accuracy	Heave	Roll & Pitch			
	All (except DMS-RP25)	DMS-05	DMS-10	DMS-25	DMS-RP25
	5cm or 5% whichever is greater (period 0 to 20s)	0.04°	0.07°	0.2°	0.25°
	Amplitude	±30°			
Maximum range	Heave ±10m; Roll & Pitch ±60°				
Bandwidth	Heave 0.05 to >30 Hz; Roll & Pitch 0 to 30Hz				
Data output rate	Digital: up to 200 Hz      Analogue: up to 500 Hz (with an external repeater)				
Available output parameters	Adjustable data packet output rate down to 1 Hz 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	172mm x 99mm diameter (excluding connector and mounting plate)				
Weight	3000m <2.3 Kg; 6000m <4.0 Kg in air				
Power supply	15-30 Vdc				
Temperature range	0°C to 55°C operating; -20°C to +70°C storage				
Power requirement	10-36V, <6.5W				
Velocity input packet formats	DMS-05, -10, -25 models only: NMEA 0183 (required VTG & GLL or GGA); TSIP; Doppler Speed Log				
Heading input packet formats	NMEA 0183; SGB; Robertson; Sperry LR40/60				
Depth rating	3000m (optional 6000m)				
Shock (survival)	30g peak 40ms half-sine				
Vibration (operating)	30mm/s or 0.2mm, 7-300 Hz				
Available output formats	DMSView for Windows offers standard TSS and other manufacturers' data strings in addition to user-configurable menu				
Software interface	Digital: RS232 or RS422 (software selectable) Analogue: via an optional remote interface for power, communications and aiding				
MTBF (computed)	50,000 hours				
Warranty	15 months from delivery or 12 months from installation - international warranty including parts and labour				
Due to continuous development, specifications may vary from those listed above.					



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