



# Teledyne TSS

MOTION SENSORS  
Product Selection Guide



**TELEDYNE MARINE**  
TSS  
Everywhere **you** look™



# Pick your Motion Sensor... a simple 3-step process

- Step 1:** Find your **Application**  
**Step 2:** Identify the **Product**  
**Step 3:** Select the **Specifications**



Full attitude sensors for accurate motion measurement in all sea and subsea conditions

RP sensors for accurate roll and pitch compensation

Highly flexible heave sensor

Full attitude sensors for accurate surface motion measurement

RP sensors for accurate roll and pitch compensation of surface applications

Application	DMS-05	DMS-10	DMS-25	DMS-RP25	DMS-RP30	DMS-H	DMS-525	DMS-550	DMS-525RP	DMS-535RP	DMS-550RP
Hydrographic Survey - Multibeam	•	•	•				•	•			
Hydrographic Survey - Singlebeam	•	•	•			•	•	•			
Dynamic Positioning	•	•	•	•	•		•	•	•	•	•
Hull Stress Monitoring	•	•	•	•	•	•	•	•	•	•	•
Crane De-rating	•	•	•			•	•	•			
Rig Monitoring	•	•	•	•	•		•	•	•	•	•
ROV - Work Class	•	•	•	•							
ROV - Inspection Class	•	•	•	•							
Helideck Motion Monitoring <sup>1</sup>	•	•	•				•	•			

<sup>1</sup> With compatible software application - not supplied

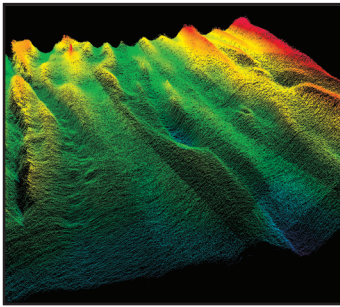
## Product Specifications

Roll and Pitch +/- 5° Dynamic (RMS)	0.03°	0.06°	0.15°	0.25°	0.30°		0.05°	0.10°	0.25°	0.35°	0.50°
Roll and Pitch +/- 30° Dynamic (RMS)	0.05°	0.05°	0.25°	0.25°	0.30°		0.25°	0.50°	0.25°	0.35°	0.50°
Heave	5cm or 5%	5cm or 5%	5cm or 5%			5cm or 5%	5cm or 5%	5cm or 5%			
Maximum Calibrated Range	Heave ±10m, Roll and Pitch ±30°	Heave ±10m, Roll and Pitch ±30°	Heave ±10m, Roll and Pitch ±30°	Roll and Pitch ±30°	Roll and Pitch ±30°	Heave ±10m	Heave ±10m, Roll and Pitch ±30°	Heave ±10m, Roll and Pitch ±30°	Roll and Pitch ±30°	Roll and Pitch ±30°	Roll and Pitch ±30°
Data Resolution	Heave 1cm, Roll and Pitch 0.01°	Heave 1cm, Roll and Pitch 0.01°	Heave 1cm, Roll and Pitch 0.01°	Roll and Pitch 0.01°	Roll and Pitch 0.01°	Heave 1cm	Heave 1cm, Roll and Pitch 0.01°	Heave 1cm, Roll and Pitch 0.01°	Roll and Pitch 0.01°	Roll and Pitch 0.01°	Roll and Pitch 0.01°
Digital Data Output Rate	Up to 100Hz	Up to 100Hz	Up to 100Hz	Up to 100Hz	Up to 100Hz	Up to 100Hz	Up to 100Hz	Up to 100Hz	Up to 100Hz	Up to 100Hz	Up to 100Hz
Analogue Data Output Rate	Up to 500Hz (with optional DMS repeater)	Up to 500Hz (with optional DMS repeater)	Up to 500Hz (with optional DMS repeater)	Up to 500Hz (with optional DMS repeater)	Up to 500Hz (with optional DMS repeater)	Up to 500Hz (with optional DMS repeater)					
Digital Interface	RS232 or RS422 <sup>2</sup>	RS232 or RS422 <sup>2</sup>	RS232 or RS422 <sup>2</sup>	RS232 or RS422 <sup>2</sup>	RS232 or RS422 <sup>2</sup>	RS232 or RS422 <sup>2</sup>	RS232 or RS422 <sup>2</sup> , Ethernet	RS232 or RS422 <sup>2</sup> , Ethernet	RS232 or RS422 <sup>2</sup> , Ethernet	RS232 or RS422 <sup>2</sup> , Ethernet	RS232 or RS422 <sup>2</sup> , Ethernet
Analogue Interface	Via optional DMS repeater	Via optional DMS repeater	Via optional DMS repeater	Via optional DMS repeater	Via optional DMS repeater	Via optional DMS repeater	Via optional DMS repeater	Via optional DMS repeater	Via optional DMS repeater	Via optional DMS repeater	Via optional DMS repeater
Ethernet							---- Dual redundant frequencies. Packet output via TCP, UDP or UDP multicast ----				
Application Software	DMSView for Windows™	DMSView for Windows™	DMSView for Windows™	DMSView for Windows™	DMSView for Windows™	DMSView for Windows™	DMS500View for Windows™	DMS500View for Windows™	DMS500View for Windows™	DMS500View for Windows™	DMS500View for Windows™
Dimensions (mm) (excluding connector)	99 (ø) x 172 (h)	99 (ø) x 172 (h)	99 (ø) x 172 (h)	99 (ø) x 172 (h)	99 (ø) x 172 (h)	99 (ø) x 172 (h)	160 x 160 x 160 <sup>3</sup>	160 x 160 x 160 <sup>3</sup>	160 x 160 x 160 <sup>3</sup>	160 x 160 x 160 <sup>3</sup>	160 x 160 x 160 <sup>3</sup>
Weight in Air (3000m/6000m)	2.3kg / 4.0kg	2.3kg / 4.0kg	2.3kg / 4.0kg	2.3kg / 4.0kg	2.3kg / 4.0kg	2.3kg / 4.0kg	4.0kg	4.0kg	4.0kg	4.0kg	4.0kg
Weight in Water (3000m/6000m)	1.0kg / 2.7kg	1.0kg / 2.7kg	1.0kg / 2.7kg	1.0kg / 2.7kg	1.0kg / 2.7kg	1.0kg / 2.7kg					
Power Supply	12-36Vdc (2A supply)	12-36Vdc (2A supply)	12-36Vdc (2A supply)	12-36Vdc (2A supply)	12-36Vdc (2A supply)	12-36Vdc (2A supply)	12-36Vdc (2A supply)	12-36Vdc (2A supply)	12-36Vdc (2A supply)	12-36Vdc (2A supply)	12-36Vdc (2A supply)
Power Requirement	<6.5W	<6.5W	<6.5W	<6.5W	<6.5W	<6.5W	<12W	<12W	<12W	<12W	<12W
Power Over Ethernet							IEEE 802.3AF-2003	IEEE 802.3AF-2003	IEEE 802.3AF-2003	IEEE 802.3AF-2003	IEEE 802.3AF-2003
Depth Rating	3000m (6000m request)	3000m (6000m request)	3000m (6000m request)	3000m							
Operating Temperature	-15°C to +55°C	-15°C to +55°C	-15°C to +55°C	-15°C to +55°C	-15°C to +55°C	-15°C to +55°C	-15°C to +55°C	-15°C to +55°C	-15°C to +55°C	-15°C to +55°C	-15°C to +55°C
MTBF	50,000 hours	50,000 hours	50,000 hours	50,000 hours	50,000 hours	50,000 hours	50,000 hours	50,000 hours	50,000 hours	50,000 hours	50,000 hours

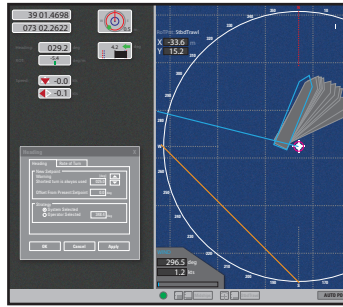
<sup>2</sup> Selectable RS232 or RS422 software <sup>3</sup> 240mm max at base

# Where is a motion sensor used?

Marine motion sensors are used to accurately measure a vessel's roll, pitch and heave movement that is generated by the sea and its conditions. TSS motion sensors are designed to be used to provide compensation data to ship systems on board surface and subsea vessels and platforms. This in turn enables other systems to provide accurate and reliable data essential to the vessel's efficient operation. When combined with other inputs such as position from GPS systems, a motion sensor becomes an essential part of the vessel's operational equipment. Heave-only sensors are designed for integration with a wide range of echosounding equipment that is pivotal to accurate hydrographic survey and mapping programmes. These can also work alongside existing RP sensors for crane and platform motion measurement operations. These applications below (as well as others) all have a requirement for accurate motion measurement in various forms.



**Hydrographic Survey**



**Dynamic Positioning**



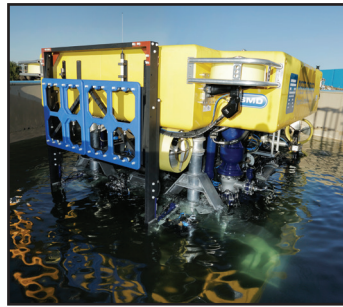
**Hull Stress Monitoring**



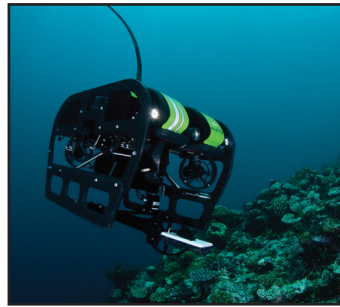
**Crane De-rating**



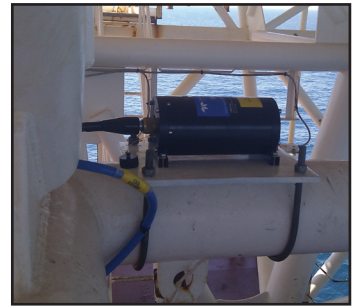
**Rig Monitoring**



**Work Class ROVs**



**Inspection Class ROVs**



**Helideck Motion Monitoring**

## What sets us apart?

### Technology

Designed to enable high productive hydrographic survey in all sea conditions, TSS attitude and motion sensors are proven to negate the errors associated with motion and will exceed the requirements of IHO standards. 3rd generation technology has enabled the latest DMS sensors to be extremely accurate, highly flexible and fully compatible with most multibeam and single beam echosounders. The purpose-built software programme that accompanies the DMS in standard customer packages is an intuitive Windows™ based programme providing a familiar operating environment for the user.

### Service

Teledyne TSS operates a 24 hour, 365 days a year technical support hotline for all products. The DMS motions sensors are delivered with a 24 month warranty whilst the MiniSense products are supplied with a 12 month warranty period. Extended warranties are available at an additional cost.



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