



# Teledyne TSS

GYROCOMPASSES

Product selection guide



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

# Pick your gyrocompass... a simple 3-step process

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



Surface navigation systems for when performance matters

Next generation of subsea AHRS and INS navigation systems

Application	SATURN AHRS 05/10/30/50	SATURN INS 05/10/30/50	MK31 INS	TOGS 05/1/3/5	TOGSINS 05/1/3/5	TOGSNAV 05/1/5
Non-IMO navigation	•	•				
IMO navigation	•	•	•			
IMO HSC navigation	•	•	•			
Dynamic positioning system	•	•				
DVL aided station keeping	•	•				
Rig moves	•	•				
Offshore construction	•	•		•	•	•
Hydrography	•	•			•	•
Survey		•				
Sonar stabilisation	•	•	•	•	•	•
Military ship navigation	•	•	•			
Military specialist systems		•	•			
ROV work class navigation				•	•	•
ROV survey work					•	•
ROV station keeping					•	•

## Product Specifications

Technology	Fiber Optic Gyro (FOG)		Ring Laser Gyro (RLG)	Fiber Optic Gyro (FOG)	
Depth rating	Surface only		Surface only	4000m & 6000m	6000m only
Heading (secant latitude RMS)	0.05° / 0.10° / 0.30° / 0.50°		0.10°	0.05° / 0.10° / 0.30° / 0.50°	0.05° / 0.10° / 0.50°
Inertial navigation performance		•	•	•	•
IMO wheelmark approval	•	•	•		
Roll and pitch (RMS)	0.01° (05/10) / 0.05° (30/50)		0.05°	0.01° (05/10) / 0.05° (30/50)	
Heave	5cm or 5% / 5cm or 5% (delayed)		5cm or 5%	5cm or 5% / 5cm or 5% (delayed)	
Alignment / settle time	10 minutes		<30 minutes	10 minutes	
Operating voltage	24VDC				
Power consumption	14W - 16W		20W	14W - 16W	20W - 31W
Dimensions	179.5mm (h) 165mm (w) x 366mm (d)		190mm (h) x 224mm (w) x 375mm (d)	157mm (Ø) x 280.5mm (h) (TOGS & TOGSINS 3/5) 182mm (Ø) x 306mm (h) (TOGS & TOGSINS 05/1)	182mm (Ø) x 449mm (h) (TOGSNAV 5) 182mm (Ø) x 428mm (h) (TOGSNAV 05/1)
Weight in air	7.1kg - 8.2kg		15kg	10.2kg - 14.5kg	20.2kg - 21.6kg
Weight in water	N/A	N/A	N/A	5.4kg - 7.2kg	10.3kg - 11.3kg
Operating temperature	-20°C to +55°C		-15°C to +55°C	-20°C to +55°C	

# Where is a gyrocompass used?

A gyrocompass system is used as a primary navigation source for surface and subsea vessels. On the surface, the purpose of a gyrocompass is to indicate the vessel's heading relative to true north. On board these surface vessels, gyrocompasses are often used alongside a range of repeaters which can be located on the ship's bridge for ease of use and access. On subsea vehicles, the gyrocompass offers a different range of capabilities and uses. Subsea navigation will usually require accurate roll and pitch as well as pressure readings to establish more accurate position and depth. The combination of capabilities also reduces the amount of space taken up by the gyrocompass, especially on board vessels where space is at a premium. A range of solid state gyrocompasses from TSS can provide solutions across a wide range of surface and subsea applications at different operating depths. Some of these applications are highlighted below.



Survey vessels



Commercial shipping



Surface vessels



Fast ferries



Yachts



Workboats



ROVs



AUVs

## What sets us apart?

### Technology

Teledyne TSS is synonymous with marine gyrocompasses and steering systems through its SG Brown heritage. For more than 100 years products have been designed and manufactured by the company for commercial marine and naval defence customers worldwide.

### Inertial sensor technology

Teledyne TSS are inertial sensor technology agnostic and can freely choose the best technology for each of our products. Teledyne TSS have a deep understanding of fiber optical gyroscopes (FOG), ring laser gyroscopes (RLG), mechanical and MEMS based inertial technology, and are at the forefront of each technology.

### Service

As part of Teledyne Marine, TSS operates a 24/7 technical support hotline for all products.

Further, Teledyne Marine is a global organization with manufacturing and support centers strategically located around the world, driven by 1300 OneTeam members focused on ultimate customer satisfaction. Our size and reach allow us to deliver a top tier level of global service and support.

### Warranty

The SATURN, TOGS & TOGSNAV gyrocompass and INS systems are supplied with a standard 24-month warranty while the MK31 is supplied with a 12-month warranty. Extended warranty is available at an additional cost.



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