



TOGSINS

Subsea Inertial Navigation Systems

The Teledyne TSS north-seeking TOGSINS subsea inertial navigation system range has just got bigger. We are pleased to announce the addition of the TOGSINS 05, our highest specification and performance model to date, ideal for carrying out high-precision navigation, construction and positioning work.

TOGSINS is built on our reliable and robust IMU (Inertial Measurement Unit) utilising our TSS FOG (Fibre Optic Gyro) technology and enhanced with our proven and trusted INS and north-seeking algorithms. Available in either 4000m or 6000m depth-rated housings, the TOGSINS is offered in four standard heading accuracy variants: 0.05°, 0.1°, 0.3° and 0.5°, along with a number of additional accessory options including external IPS, brackets, adapter plates and extension cables, designed to replace older TOGS models and suit every customer need.

The system's fast 10-minute alignment time enables a rapid vehicle launch from power up.

The TOGSINS becomes an even more powerful navigation tool when integrated with other external sensors such as a DVL or a USB/LBL.



TOGSINS 3
TOGSINS 5



TOGSINS 05
TOGSINS 1

PRODUCT FEATURES & BENEFITS

- Suited to ROV, trencher and tractor subsea navigation, detailed survey and construction tasks
- Heading, pitch, roll and heave, and acceleration output data
- Broad range of INS and AHRS options to suit all your fleet needs
- Operation ready within 10 minutes of start up
- Rugged and robust with a choice of 4000m or 6000m titanium housings
- Maintenance-free TSS FOG IMU with high MTBF
- Easily configured with any standard browser or serial port command line interface
- Great connectivity and flexibility with a range of serial and Ethernet outputs and connections
- Ease of export and ownership due to dual-use export classification



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TECHNICAL SPECIFICATIONS

		TOGSINS 05	TOGSINS 1	TOGSINS 3	TOGSINS 5
Performance	Heading accuracy	0.05° secant latitude RMS	0.1° secant latitude RMS	0.3° secant latitude RMS	0.5° secant latitude RMS
	Roll and pitch accuracy	0.01° RMS		0.05° RMS	
	Heave accuracy	5cm or 5%		5cm or 5% (delayed)	
	Alignment time	10 minutes			
	Angular rate	≥250°/s	≥300°/s	≥500°/s	
	Operating latitude	± 80°			
Position	GPS aiding	factor of 3 improvement*			
	DVL aiding - straight line (CEP50)	0.12% distance travelled	0.15% distance travelled	0.30% distance travelled	0.60% distance travelled
	DVL aiding - dynamic motion	0.04% distance travelled	0.05% distance travelled	0.08% distance travelled	0.10% distance travelled
	No aiding (CEP50)	0.5m after 1 min / 1.8m after 2 min / 7m after 4 min	0.6m after 1 min / 2.5m after 2 min / 10m after 4 min	5m after 1 min / 20m after 2 min / n/a after 4 min	n/a after 1 min n/a after 2 min n/a after 4 min
Power	Power supply	18 - 36Vdc			
	Power consumption	16W		14W	
Interface	Serial (bi-directional)	4 x configurable RS-232 / RS-422			
	Serial (transmit only)	4 x configurable RS-232 / RS-422		n/a	
	Ethernet	10 / 100MB			
	Data formats	NMEA 0183 / IEC 61162, TSS proprietary and industry standard			
	Aiding inputs	GPS, EM Log, DVL, USBL/LBL,Depth Sensor, SVS			
Physical characteristics	Dimensions	4000m	182mm (Ø) x 306mm (h)		157mm (Ø) x 280.5mm(h)
		6000m	182mm (Ø) x 309mm (h)		157mm (Ø) x 283.5mm(h)
	Weight in air	4000m	14.5kg		10.2kg
		6000m	16.0kg		11.5kg
	Weight in water	4000m	7.2kg		5.4kg
		6000m	8.5kg		6.5kg
	Material	4000m	n/a		Titanium
		6000m	Titanium		
	MTBF		100,000 hours		
	Environmental and EMC	Operating temperature	-20°C to +55°C		
Storage temperature		-30°C to +70°C			
Environmental		Meets or exceeds IEC 60945			
EMC		Meets or exceeds IEC 60945			
Compliance	Standards	n/a			
	Export	The TOGSINS 05 is listed on the EU dual-use control list as 7A003.b, while TOGSINS 1, 3 and 5 are listed on the EU dual-use control list as 7A103.a.1, ref.Appendix 1 of the EU-regulation 2021/821			
Warranty		24 months’ international warranty including parts and labour			

SCOPE OF SUPPLY

- TOGSINS 05, TOGSINS 1, TOGSINS 3 and TOGSINS 5
- Power in/data cable 1.5m
- Subsea Ethernet cable 1.5m
- Ethernet configuration cable 2m

OPTIONAL

- Power in/data cable 5m
- Power out/data cables** 1.5m or 5m (not available for TOGSINS 3 and TOGSINS 5)
- Connector options: Standard TOGSINS connectors are Impulse, some models are offered with alternatives, please enquire
- Extended warranty: Up to 7 years available

*Dependent on GPS specification

**Optional cable(s) required for Power out/Data 2, Power out/Data 3 and Power out/Data 4 connections with power pass through



TELEDYNE MARINE

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