

SATURN INS

Surface Navigation Systems

When Performance Matters

SATURN INS (Inertial Navigation System), from Teledyne TSS, is a world leading surface navigation system offering enhanced navigation performance. Built on our reliable and robust IMU (inertial Measurement Unit), utilising our TSS FOG (Fibre Optic gyro) technology and enhanced with our own proven and trusted INS Algorithms.

The SATURN INS is offered in four standard heading accuracy variants: 0.1°, 0.3° & 0.5° to suite virtually every customer need.

The system has a very fast 10 minute alignment time from initial switch on, and requires an input from an external GPS or an EM log to be able to give the best INS accuracy performance from the system.

The Saturn range of FOG IMUs are IMO approved and Wheelmark certified to the Marine Equipment Directive classification.



SATURN 10INS



SATURN 30INS
SATURN 50INS

PRODUCT FEATURES & BENEFITS

- Four models in the range for all your fleets needs
- Operationally ready within 10 minutes of start up
- Rugged & Robust construction
- Full Inertial navigation performance with IMO & IMO –HSC classification
- Ease of export and ownership due to Dual Use export classification
- Maintenance free with high MTBF
- Utilises our reliable TSS FOG IMU
- Ease of control with our Web based browser & optional remote control unit
- Great connectivity & flexibility with a large range of outputs including Ethernet
- Can simultaneously be used for navigation, platform stabilisation & Scientific tasks



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TECHNICAL SPECIFICATIONS

		SATURN 10INS	SATURN 30INS	SATURN 50INS
Performance	Heading accuracy	0.1° secant latitude RMS	0.3° secant latitude RMS	0.5° secant latitude RMS
	Roll & pitch accuracy	0.01° RMS	0.05° RMS	0.05° RMS
	Roll and pitch range	± 90°		
	Heave accuracy	5 cm or 5%	5cm or 5% (delayed)	5cm or 5% (delayed)
	Alignment time	10 minutes		
	Angular rate	≥300°/s	≥500°/s	≥500°/s
	Operating latitude	± 80°		
Position	GPS aiding*	factor of 3 improvement		
	No aiding (CEP50)	1.5m after 1 min / 6m after 2 min	5m after 1 min / 20m after 2 min	Not specified
Power	Power supply	18-36 VDC		
	Power consumption	16W	14W	14W
Interface	Bi-directional	4 x configurable RS-232 / RS-422		
	Transmit only	4 x configurable RS-232 / RS-422		
	Ethernet	1 x Ethernet		
		Status / Alarm relay contacts		
	Data formats	NMEA 0183 / IEC 61162, TSS proprietary and industry standard		
	Aiding inputs	GPS, EM Log, DVL		
Physical Characteristics	Dimensions	179.5mm (h) x 165mm (w) x 366mm (d)		
	Weight	8.2kg	7.1kg	7.1kg
	Rating	IP66	IP31	IP31
	MTBF	150,000 hours		
Environmental and EMC	Operating temperature	-20°C to +55°C		
	Storage temperature	-30°C to +70°C		
	Environmental	Meets or exceeds IEC 60945		
		MIL-STD-167A MIL-STD-810H (516.8)		
EMC	Meets or exceeds IEC 60945			
	MIL-STD-461G			
Compliance	Export	Goods are subject to Strategic Export Control		
	Standards	Approved to IMO A424(XI), IMO A821 (19), IMO A694(17), MSC 191(79), ISO 8728, ISO 16328, IEC 60945, IEC 62288, IEC 61162, US Coast Guard MRA		
Warranty		24 months international warranty including parts and labour		
Scope of Supply		SATURN 10INS unit	SATURN 30INS unit	SATURN 50INS unit
		Power/data cable (5m)*	Power cable (3m)	Power cable (3m)
		RJ45 Ethernet cable (3m)	RJ45 Ethernet cable (3m)	RJ45 Ethernet cable (3m)
Options		Power/data cable up to 20m	Power/data cable up to 20m	
		Optional data cables up to 20m	Optional data cables up to 20m	
		Mounting plate		
		SATURN CDU and various other repeaters & ancillaries		
		Extended warranty		

*performance aiding sensor dependent



TELEDYNE MARINE

TSS

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Specifications subject to change without notice.
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