

# Saturn

## Surface AHRS & Navigation Systems

### When Performance & Reliability Matters

The Teledyne TSS world leading north seeking SATURN AHRS navigation system range has just got bigger. We are pleased to announce the addition of the SATURN 05 our highest specification and performance model to date. Not only does this new system offer enhanced high accuracy navigation it is fully compliant with MIL-STD-810H & MIL-STD-167A for shock & vibration, and MIL-STD-461G for EMC.

Built on our reliable and robust IMU (inertial Measurement Unit), utilising our TSS FOG (Fibre Optic gyro) technology and enhanced with our own proven north seeking Algorithms. The SATURN AHRS is offered in four standard heading accuracy variants: 0.05°, 0.1°, 0.3° & 0.5° to suite virtually every customer need.

### Product features & benefits

- IMO, MED Wheelmark and MCA Red Ensign ships gyrocompass certified
- Perfectly suited for all maritime surface navigation, platform stabilisation, and construction tasks
- Heading, pitch, roll and heave output data
- Broad range of INS & AHRS options to suit all your fleets needs
- Operationally ready within 10 minutes of start up
- Rugged & Robust construction with Proven performance
- Maintenance free TSS FOG IMU with high MTBF
- Easily configured with any standard browser or optional Configurable Display Unit
- Great connectivity & flexibility with a large range of serial & Ethernet connections
- Ease of export and ownership due to Dual Use export classification



SATURN 05  
SATURN 10

SATURN 30  
SATURN 50



All SATURN models are easily managed either with our user-friendly embedded web server, accessible via any web browser, or via our optional, BAM compliant CDU (Configurable Display Unit).

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 accuracy performance from the system.

All SATURN AHRS models are certified to IMO & Wheelmark Marine Equipment Directive (including IEC-62923-14/2 BAM compliance) & MCA Red Ensign.



**TELEDYNE MARINE**  
TSS  
Everywhere you look™

SATURN

TECHNICAL SPECIFICATIONS



		SATURN 05	SATURN 10	SATURN 30	SATURN 50
Performance:	Heading accuracy	0.05° secant latitude RMS	0.1° secant latitude RMS	0.3° secant latitude RMS	0.5° secant latitude RMS
	Roll & pitch accuracy	0.01° RMS		0.05° RMS	
	Heave accuracy	5 cm or 5%		5cm or 5% (delayed)	
	Alignment time	10 minutes			
	Angular rate	≥250°/s	≥300°/s	≥500°/s	≥500°/s
	Operating latitude	± 80°			
Power:	Power supply	18 - 36Vdc			
	Power consumption	16W	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	GNSS, EM Log, DVL			
Physical Characteristics:	Dimensions	179.5mm (h) x 165mm (w) x 366mm (d)			
	Weight	8.4kg	8.2kg	7.1kg	7.1kg
	Rating	IP66	IP66	IP31	IP31
	MTBF	250,000 hours			
Environmental and EMC:	Operating temperature	-20°C to +55°C			
	Storage temperature	-30°C to +70°C			
		Meets or exceeds IEC 60945			
	Environmental	MIL-STD-167A MIL-STD-810H (516.8)	MIL-STD-167A MIL-STD-810H (516.8)		
		Meets or exceeds IEC 60945			
	EMC	MIL-STD-461G	MIL-STD-461G		
Compliance:	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, MCA 2016 SI 2016\1025			
	Export	The SATURN 05 (AHRS) is listed on the EU dual-use control list as 7A003.c.1, while SATURN (AHRS) 10, 30 and 50 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

- SATURN 05, SATURN 10, SATURN 30 & SATURN 50
- Power in/data cable (5m) for SATURN 05, SATURN 10
- Power cable (3m) for SATURN 30, SATURN 50
- RJ45 Ethernet cable (3m)

OPTIONAL

- Power in/data cable up to 20m (not available for SATURN 30 & SATURN 50)
- Power out/data cables up to 20m\* (not available for SATURN 30 & SATURN 50)
- Mounting plate
- SATURN CDU and various other repeaters & ancillaries
- Extended warranty

\*Optional cable(s) required for Power out/Data 2 and Power out/Data 3 with fused power pass through (0.5a