Sonardyne UK (Head Office)
T. +44 (0) 1252 872288
F. +44 (0) 1252 876100
E. sales@sonardyne.com
www.sonardyne.com

Datasheet

Lodestar 200 Subsea AHRS

Description

Lodestar 200 is a combined solid state Attitude and Heading Reference System (AHRS), which is upgradable to SPRINT Acoustically Aided Inertial Navigation System [AAINS].

The unit is comprised of three high grade, high reliability, commercially available, Ring Laser Gyros (RLG) and accelerometers. The sensors are also the standard for commercial aviation with a proven 15+ year track record.

Lodestar 200 AHRS provides heading, pitch, roll accuracy and settle time that is class leading in the low-cost north seeking subsea AHRS category. It requires no external aiding and can settle in <15 minutes or less in dynamic conditions.

On-board data storage and backup battery functionality ensures continued operation and no data-loss even if communications or external power is lost.

Lodestar 200 AHRS is designed for subsea vehicle integration and provides industry standard gyrocompass for simple interfacing.

In addition, advanced outputs such as acceleration and rotation rates are also provided to support ROV autopilot and station keeping functions.

Lodestar 200 AHRS has built-in field upgradability to the higher performance Lodestar 300 AHRS and SPRINT 300 aided INS. This feature allows operators to equip their vehicles with a cost effective AHRS at vehicle assembly whilst ensuring commercial and operational flexibility to upgrade as and when needed in the field.

The optional SPRINT upgrade provides a dual algorithm capability, which is unique in the market and allows for dual use from one inertial instrument, e.g. Lodestar AHRS for ROV, SPRINT INS for Survey teams.

Lodestar and SPRINT have a proven track record spanning 10 years.

The instrument is available in 4,000 and 6,000 metre depth ratings and is one of the smallest form factor subsea inertial instruments available.

Applications Include

- ROV gyrocompass
- Vehicle guidance

Key Features

- Single box solution for motion sensor and gyrocompass
- 0.4 secant latitude heading accuracy
- 0.01° roll and pitch accuracy
- <10 minute settling time
- Fast follow up speed of 900°/sec**
- MTBF inertial sensors (RLG and Accelerometer) > 400,000 hours
- Choice of depth ratings: 4,000 and 6,000 metres
- Choice of connecters: Seacon (standard) or Seanet® (for use with FMC Schilling Robotics ROV)
- Transport approved rechargeable Li-ion battery back-up as standard
- Minimum internal memory of 8 GB allows post processing and remote diagnostics
- Ethernet interface
- Lodestar 200 AHRS can be remotely upgraded to Lodestar 300 AHRS or SPRINT 300 INS

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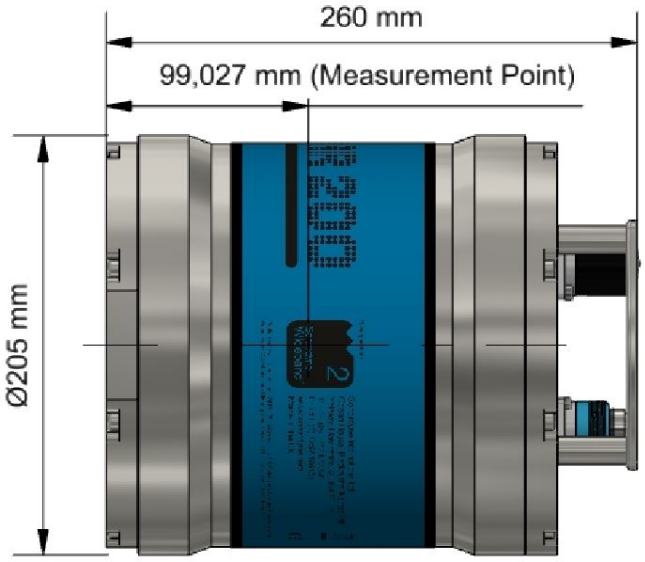
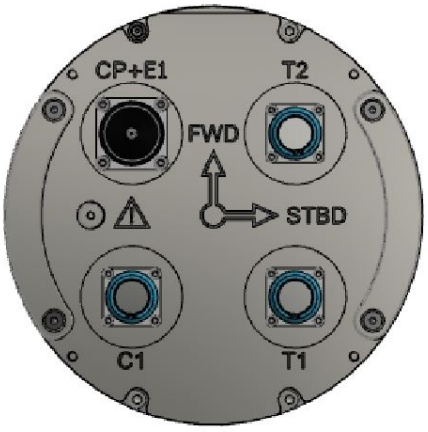
Specifications

Lodestar 200 Subsea AHRS





Feature	Lodestar	Type 8084-xxx	Type 8084-xxx	Type 8084-xxx
Depth Rating		4,000 metres	4,000 metres	6,000 metres
Physical	Size (Diameter x Length)	Ø205 x 260 mm	Ø205 x 250 mm	Ø205 x 280 mm
	Weight in Air/Water*	18.5/11.5 kg	18.5/11.5 kg	22/14 kg
	Mechanical Construction	Titanium	Titanium	Titanium
	Connectors	1 x Seacon	1 x Seanet®	1 x Seacon
Performance	Heading Accuracy	0.4° (Lodestar AHRS)		
	Roll and Pitch Accuracy	0.01°		
	Settle Time	<10 minutes in dynamic conditions (AHRS)		
Upgrades	Lodestar 200 AHRS can be remotely upgraded to Lodestar 300 AHRS or SPRINT 300 INS			
Environmental	Temperature	-20 to +55°C (operating), -20 to +60°C (storage)		
	Shock Rating	22 g, 11 ms half sine		
Power	Power Requirement	24/48 V DC, 15 W nominal, 35 W max		
	Back Up Battery Type/Life	Li-ion/5 minutes		
Data/Comms.	Data Storage	8 GB internal memory		
	Digital Ports/Protocol	1 digital Port/RS232 or RS485		
	Other Ports	1 × Ethernet, 1 Triggers		
	Output Rate	Up to 100 Hz		
	Output Telegrams	Industry standard AHRS/INS telegrams including acceleration and rotation rates**		

*Estimated Weights

**Specific outputs such as acceleration and rotation rates may be limited below quoted performance for reasons of export classification and control