

Datasheet

SPRINT-Nav Mini



SPRINT-Nav Mini is the world's smallest hybrid acoustic-inertial navigator. Built on years of experience gained with SPRINT-Nav, it is designed to provide accurate, precise and robust guidance or navigation information for subsea vehicles.

The SPRINT-Nav Mini combines carefully selected inertial sensors, a Syrinx Mini Doppler velocity log (DVL) and a high accuracy pressure sensor into a single housing and is optimised for size, weight and power consumption.

Like all SPRINT-Nav products, the SPRINT-Nav Mini uses information from all the sensors optimally to provide seamless operation and unprecedented levels of performance compared with standalone instruments.

There are two SPRINT-Nav Mini variants. The SPRINT-Nav Mini Guidance provides a single message containing all the information typically required for vehicle guidance and control reducing complexity of integration and operation. The SPRINT-Nav Navigator in addition provides latitude and longitude updates suitable for AUV control.

All SPRINT-Nav Mini come equipped with highly accurate gyroscopes and accelerometers which are not affected by magnetism and provide a true north seeking gyrocompass.

All SPRINT-Nav Mini provide velocity, depth and altitude which is free from noise and immune to short term DVL acoustic outages. Being able to provide these messages, including quality metrics, at a constant output rate of up to 200 Hz drastically improves vehicle control.

The compact form factor is significantly smaller and lighter than any other combination available in the market.

The unit comes pre-calibrated and requires no additional calibration offering minimal operational complexity.

It offers an easy-to-use Web UI which provides an intuitive dashboard viewer as well as configuration and detailed status pages for integration and troubleshooting.

SPRINT-Nav Mini is supplied with either top- or sidewall-mounted connectors for easy vehicle integration. For vehicles where height is critical, the sidewall variant measures only 187 mm in height.

Typical Applications

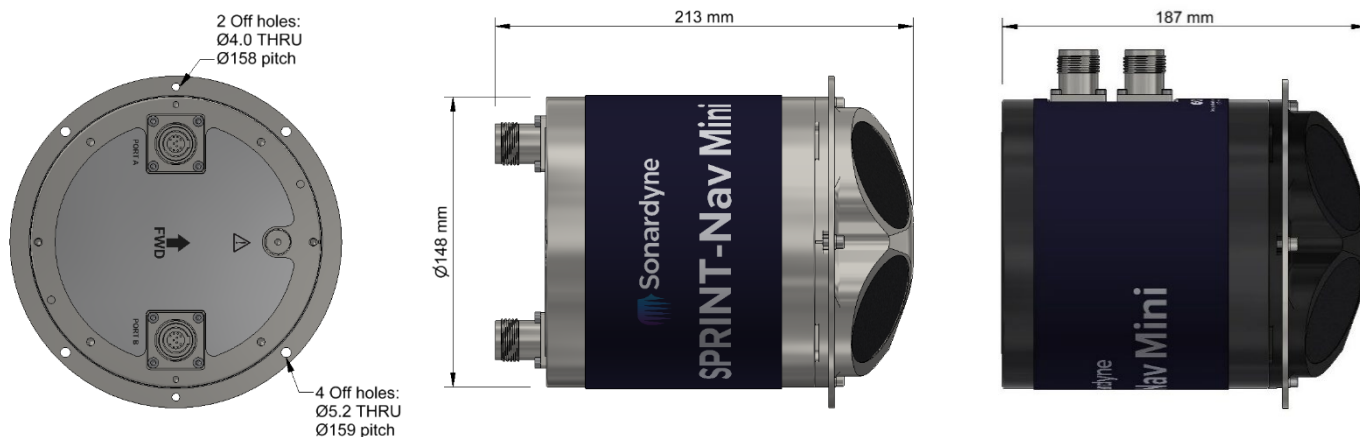
- Ideal for observation-class ROVs, light work-class ROVs, USVs, manned submersibles and diver navigation boards
- Ideally suited for both remotely operated and autonomous vehicles
- True North seeking

Key Features

- World's smallest hybrid acoustic-inertial navigator
- Minimal sensitivity to vehicle dynamics or wave motion
- All-in-one turn-key solution
- Highly optimised size, weight and power
- 300 and 4,000 m variants
- Fixed frequency, continuous and robust vehicle control, guidance and navigation outputs
- Low-height variant available measuring only 187 mm in height
- Factory calibrated
- 500 kHz DVL
- 0.3–200 m bottom track operating altitude
- Intuitive Web UI
- Export is not ITAR controlled

Specifications

SPRINT-Nav Mini



SPRINT-Nav Mini 4,000 m

300 m Side Connector

Performance			SPRINT-Nav Mini – Guidance	SPRINT-Nav Mini – Navigator
DVL Aided ¹	Typical Survey		n/a	0.05%
	Distance from Origin		n/a	0.30%
Altitude Min/Max			0.3/200 m	0.3/200 m
USBL & DVL Aided	Precision Improvement		n/a	Up to 5x better
Heading ¹ (Secant Latitude)			0.50°	0.15°
Roll and Pitch ¹			0.02°	0.02°
Angular Rate Range			±450°/s	±450°/s
Velocity Precision ¹ (<2 m/s at 50 m Altitude)			<0.4 cm/s	<0.4 cm/s
Depth accuracy ¹			0.1% FS	0.1% FS
Power				
Power Requirements			24 V dc, 10 W nominal	
Physical/Comms				
Data Storage			32 GB internal memory	
Serial Ports/Protocol			3x RS232	
Other Ports			Ethernet, UDP/TCP, WebUI, 2 x trigger inputs (1PPS/DVL trigger)	
Mechanical Construction		300 m	POM-C	
		4,000 m	Titanium	
Dimensions (Diameter x Height)	Standard	300 m	148 x 213 mm	
		4,000 m	148 x 213 mm	
	Side Connector	300 m	148 x 187 mm (174 x 187 mm including connector)	
		4,000 m	148 x 187 mm (174 x 187 mm including connector)	
Weight Air/Water ²		300 m	3.6/0.7 kg	
		4,000 m	7.1/4.2 kg	
Environmental				
Depth Rating			300/4,000 m	
Operating Temperature			-5 to 50°C	
Storage Temperature			-25 to 55°C	

¹ CEP50.

² Estimated Weights.