

# Datasheet

## SPRINT-Nav Mini



SPRINT-Nav Mini 300 m



SPRINT-Nav Mini 4,000 m

**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 two connectors making retrofitting into existing control systems simple. For vehicles where height is critical, a sidewall connector variant is available measuring only 182 mm in height.

### Typical Applications

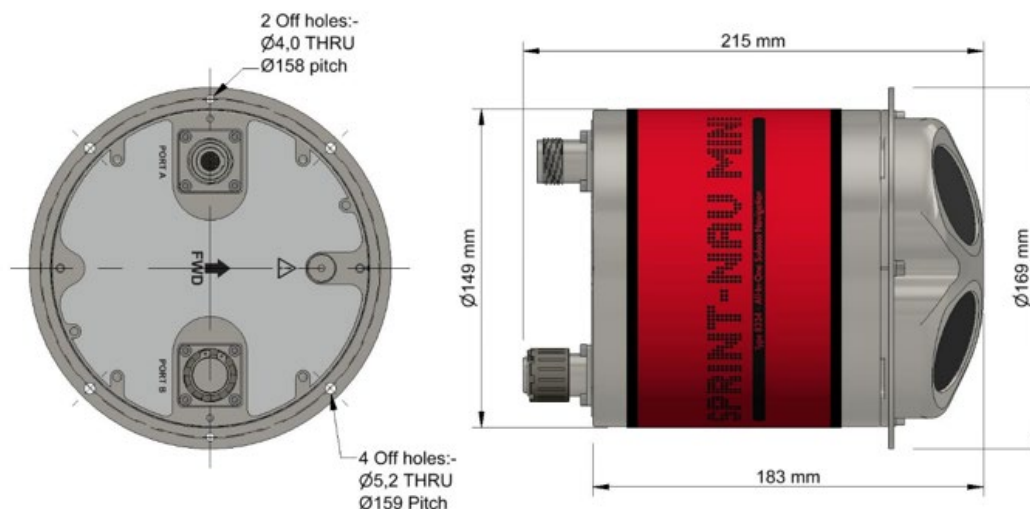
- Ideal for observation-class ROVs, light work-class ROVs, USVs, manned submersibles and diver navigation boards
- Ideally suited for both remotely operated and autonomous vehicles
- True North seeking

### 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 and guidance outputs
- Low-height variant available
- 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 Shown Above

Performance		SPRINT-Nav Mini – Guidance	SPRINT-Nav Mini – Navigator
DVL Aided <sup>1</sup>	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 <sup>1</sup> (Secant Latitude)		0.50°	0.15°
Roll and Pitch <sup>1</sup>		0.10°	0.10°
Angular Rate Range		±450°/s	±450°/s
Velocity Precision <sup>1</sup> (<2 m/s at 50 m Altitude)		<0.4 cm/s	<0.4 cm/s
Depth accuracy <sup>1</sup>		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) (incl. connectors and mounting ring)	300 m	149 x 215 mm	
	4,000 m	149 x 215 mm	
Weight Air/Water <sup>2</sup>	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	

<sup>1</sup> CEP50.

<sup>2</sup> Estimated Weights.