

Datasheet

SPRINT-Nav M



300 m



1,000 m



4,000 m

SPRINT-Nav M is a compact 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.

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

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

SPRINT-Nav M outputs industry standard messages for command and control of AUVs, ROVs and USVs, removing complex integration.

It comes equipped with highly accurate gyroscopes and accelerometers which are not affected by magnetism and provide a true north seeking gyrocompass.

SPRINT-Nav M provides 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.

It comes pre-calibrated and requires no additional calibration presenting minimal operational complexity.

An easy-to-use Web UI provides an intuitive dashboard viewer as well as configuration and detailed status pages for integration and troubleshooting. A clearly defined API allows for deep integration into vehicle control systems and remote operation of the system.

SPRINT-Nav M 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

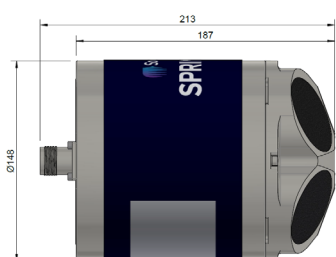
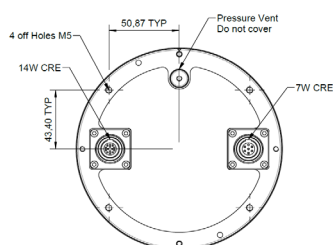
- Ideal for observation-class ROVs, light work-class ROVs, AUVs, USVs, manned submersibles and diver navigation boards
- Ideally suited for both remotely operated and autonomous vehicles
- True North seeking

Key features

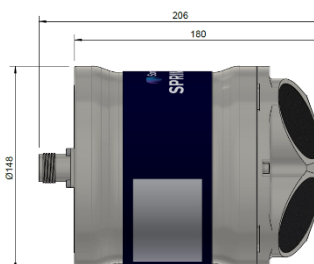
- All-in-one turn-key solution
- Highly optimised size, weight and power
- 300, 1,000 and 4,000 m variants
- Fixed frequency, continuous and robust vehicle control, guidance and navigation outputs
- Alignment in <5 minutes with DVL aiding
- Low-height variant available measuring only 187 mm in height
- Factory calibrated
- 500 kHz DVL + ADCP
- 0.3–200 m bottom track operating altitude
- Intuitive web UI
- Modern API
- Export is not ITAR controlled

Specifications

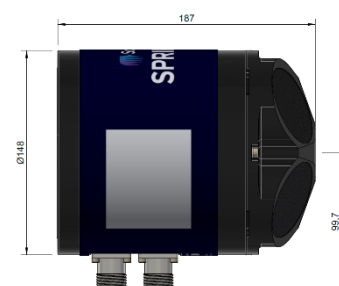
SPRINT-Nav M



SPRINT-Nav M 4,000 m



SPRINT-Nav M 1,000 m



300 m side connector

Performance		SPRINT-Nav M	
DVL aided	Typical survey ¹	0.05%	
	Distance from origin	0.2%	
Altitude min/max		0.3/200 m	
USBL and DVL aided	Precision improvement	Up to 5x better	
Heading (secant latitude) with GNSS or USBL and DVL ²		0.08°	
Heading ³ (secant latitude) with GNSS or USBL or DVL		0.12°	
Roll and pitch		0.02°	
Angular rate range		±450°/s	
Velocity precision (<2 m/s at 50 m altitude)		<0.4 cm/s	
Depth accuracy ³		0.01% FS	
ADCP ⁴	Profiling range	0.4–100 m	
	Velocity range and RMS (along beam)	Up to ±6.7 m/s ±0.4% of measured value	
	Maximum number of cells	255	
	Max ping rate	4 Hz (ADCP) or 10 Hz (DVL)	
Power			
Power requirements ⁵		24 V dc, 10 W nominal	
Physical/comms			
Data storage		64 GB internal memory	
Serial ports/protocol		3x RS232	
Interfaces		Ethernet, UDP/TCP, WebUI, 2 x trigger inputs/outputs (1PPS/DVL trigger), NTP, ZDA + 1PPS out	
Mechanical construction	300 m	POM-C	
	1,000/4,000 m	Titanium	
Dimensions (diameter x height, including connectors)	Standard	1,000/4,000 m	148 x 206/148 x 213 mm
	Side connector	300 m	148 x 187 mm (174 x 187 mm including side connector)
Weight air/water	300 m	3.7/0.7 kg	
	1,000/4,000 m	5.5/2.9 kg / 7.1/4.1 kg	
Environmental			
Depth rating		300/1,000/4,000 m	
Operating temperature	300 m	-5 to 40°C	
	1,000/4,000 m	-5 to 50°C	
Storage temperature		-25 to 55°C	

¹ All accuracy figures related to time or distance are CEP50, all angular accuracies/heave are 1DRMS.

² Heading accuracy is improved by availability of both absolute position (GNSS/USBL) and DVL.

³ 0.01% precision, 0.05% accuracy, relative to full scale of sensor, raw pressure available or processed depth by SPRINT-Nav.

⁴ Optional upgrade.

⁵ Contains backup battery to maintain system performance during power dropouts.