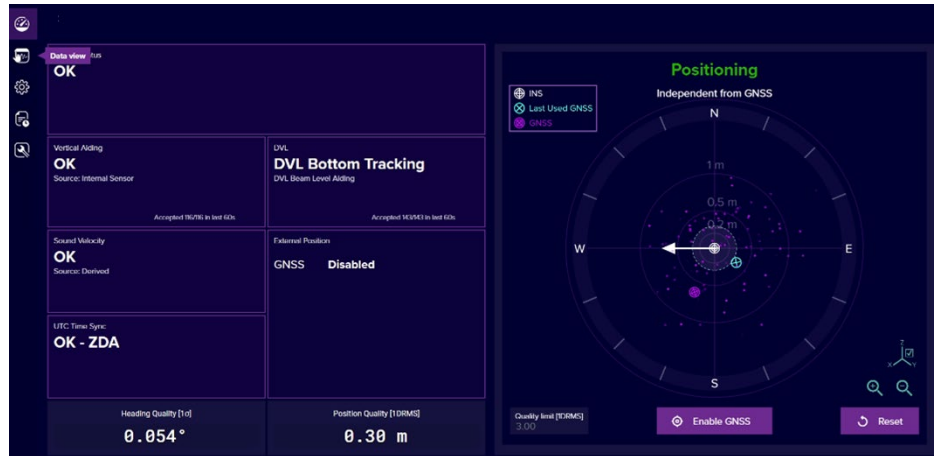


Datasheet

SPRINT-Nav DP



SPRINT-Nav DP is a versatile, DP position reference sensor providing resilience and redundancy without the need for targets in shallow water environments.

SPRINT-Nav DP is a turn-key solution combining carefully selected inertial sensors, high altitude DVL and a high accuracy pressure sensor into a single housing.

Building on the reputation of Sonardyne's SPRINT-Nav family and Marksman DP heritage, SPRINT-Nav DP provides positioning independent of GNSS.

The unit comes pre-calibrated internally, requiring minimal additional calibration to the vessel, achieving unprecedented performance with minimal operational complexity.

SPRINT-Nav DP when controlled by a DP operator (DPO) initialises its position from GNSS. The DPO can then disable the GNSS from aiding the SPRINT-Nav DP, putting the unit into an independent mode where it is calculating position purely on its internal sensor suite, thus providing an independent position reference to the GNSS as required for DP2 and DP3 operations.

SPRINT-Nav DP is interfaced to a DP desk by industry standard GNSS telegrams describing position and quality.

SPRINT-Nav's hybrid navigation algorithms fuse tight beam-level DVL

aiding with high update rate stable IMU and pressure data. Providing industry leading position hold when around structures and in poor weather where other systems struggle.

A key component of SPRINT-Nav DP is the dual function DVL/ADCP. For robustness each DVL/ADCP transducer is fitted with a full water block to ensure protection of the internal components. Combined with beam level aiding SPRINT-Nav DP will continue to function even if one of the transducers has been damaged or cannot see the seabed.

ADCP functionality allows the DPO to view water current velocity and direction from SPRINT-Nav DP to 120m water depth, without any negative performance on position quality. Allowing safer deployment and recovery of kit into and out of the water.

SPRINT-Nav DP can be interfaced using a single robust connection into a ships network or direct to an interface unit on the bridge. A 1U rack mount is available for interfacing.

Unlike other INS, an internal battery in SPRINT-Nav DP provides continuous navigation during power dropouts preventing the need to reinitialise the INS after a power outage.

Onboard logging enables data storage for remote support and QC.

Typical applications

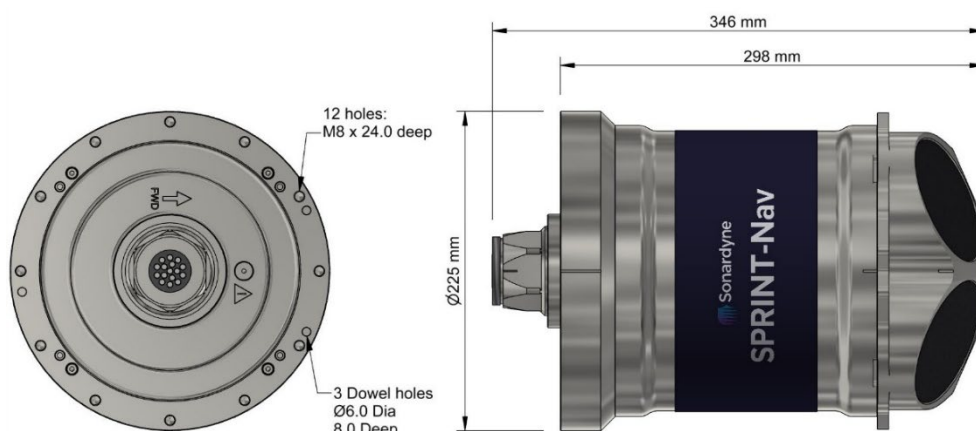
- All classes of DP vessel
- Oil and gas construction and DP operations
- Wind turbine installation
- Independent positioning during GNSS scintillation events
- Current monitoring beneath vessel

Key features

- GNSS independent positioning
- 375 kHz DVL for optimised navigation up to 200 m range
- Part of the world's highest performing hybrid navigator family
- All-in-one turn-key solution
- ADCP for water current measurement
- 10-minute initialisation
- Remote diagnostics and performance verification
- Fully water blocked DVL endcap
- Export is not ITAR controlled

Specifications

SPRINT-Nav DP



Performance		SPRINT-Nav DP
DVL aided ¹	Station keeping	<2 m over 24 hours
	Straight line	0.12% of distance travelled
	Dynamic movement	0.04% of distance travelled
Unaided		1.2 m in 60 s
Altitude min/max	Standard	0.4/200 m
GNSS aided	Precision improvement	Up to 7x better
INS/AHRS heading (Secant latitude) (1DRMS)		0.05°
Roll and pitch (1DRMS)		0.01°
ADCP	Profiling range	0.4–120 m
	Velocity range and RMS (along beam)	Up to ±8.4 m/s ±0.4% of measured value
	Maximum number of cells	255
	Maximum ping rate	4 Hz (ADCP) or 20 Hz (DVL)
Power		
Power requirements	DVL on and battery fully charged	24 V dc ±10%, 18 W nominal, 30 W maximum
Internal battery backup		Li-ion/5 minutes
Physical/comms		
Data storage		>1 week of data logging
Ports/protocol		1x RS422, Web UI, TCP/UDP
Other ports		2 triggers for PPS from GNSS
Mechanical construction		Titanium
Dimensions (diameter x height) (Excluding deployment pole mount)		225 x 346 mm
Weight air/water ²		23.9/13.1 kg
Environmental and EMC		
Depth rating		100 m
Operating temperature		-5 to 50°C
Storage temperature		-25 to 55°C
Standards		EN60945 with General Communications Hub, EN61000 without, CE only

¹ CEP50

² Estimated weights.