Sonardyne
SOUND IN DEPTH

SUBSEA TECHNOLOGY

Syrinx is a 600 kHz Doppler Velocity Log (DVL) for surface and subsea vehicles. It combines the high altitude, high resolution features of 300 kHz and 1200 kHz DVLs in a single, easy to install navigation instrument. The adaptive bottom lock technology inside Syrinx provides consistency and reliability over challenging and changing topography and works at an altitude higher than 85% of the world's subsea infrastructure. This reduces the amount of time a vehicle has to dive on free inertial.

SONARDYNE SYRINX DVL
HIGH INTEGRITY 600 KHZ DOPPLER VELOCITY LOG

A HIGHLY CAPABLE AND VERSATILE DVL

Syrinx can be used as a standalone DVL, as part of an integrated system, or perform both functions at once due to concurrent Ethernet and serial outputs, capable of ping rates of up to 25 Hz. Its dual capability means that only one DVL/altitude sensor is required for both ROV control and Survey crews, saving on cost and vehicle payload space.

The unit runs an embedded DVL Manager using a web browser, eliminating the need to install dedicated PC software. This allows Syrinx to be configured and tested prior to deployment, and then during subsea operations, controlled and navigation data is easily visualised. The hardware and vehicle interfacing has been designed to be easy to install, set up and use and is compatible with DVL mounting arrangements from third parties. With similar dimensions to existing DVLs, there should be no need for modifications to subsea vehicles in order to upgrade to a Syrinx DVL. PD0, PD3, PD4, PD6, PD13 telegrams are supported for integration to third party navigation systems.

When tightly integrated with Sonardyne's INS, SPRINT, unmatched DVL aided navigation can be achieved. This allows for enhanced performance through optimisation of beam-level data passed between Syrinx and SPRINT to aid velocity prediction and outlier rejection, with positioning able to continue even if one or two DVL beams are unavailable.

Syrinx's onboard processor is able to report high resolution water velocity layer data in fine detail. This makes it suitable for ADCP applications or AUVs measuring water flow to update their positioning algorithms.

WHAT YOU NEED TO KNOW

- Class-leading precision and accuracy combining the benefits of 300 kHz and 1200 kHz
- Easy to set up and use
- Reliable and adaptive bottom lock
- 175 metre high altitude range and low noise, low altitude performance
- High update rate even at < 1m altitude
- Embedded software interface for configuration, self-test and data visualisation
- Concurrent outputs (Serial and Ethernet) support use by ROV and Survey teams
- Standard 4,000 metre rated titanium housing option for Work Class ROVs
- Water-blocked transducer array that lets you continue working, even if a transducer is damaged

ROV STATION KEEPING

In open water, Syrinx is able to give a robust velocity output in a stationary environment, even at low altitude, giving long term accuracy with low bias errors in the range of a few tens of micro-metres per second. In this mode, Syrinx measures the phase change between backscatter return from each pulse using a wideband correlation technique. Sound is reflected back from many scatterers located on the seabed within a small footprint. Navigation can continue uninterrupted through partial sector obstruction and large differences in path length on an irregular seabed. A robust, low-altitude mode makes navigating near structures more precise for suveys such as metrology.

LOW ALTITUDE PERFORMANCE

Syrinx excels at all altitudes thanks to its improved reliability adaptive bottom lock combined with low noise electronics and fully linear signal processing techniques. These techniques help prevent loss in output measurements, including when navigating over challenging terrain of any type. Unlike many DVLs, Syrinx can continue to output data at very high update rates when operating at very low altitudes (<1 metre).

OPTIONS AND FEATURES

A 4,000 metre rated titanium housing is supplied as standard to meet the requirements of modern Work-Class ROVs. 3,000 metre, 6,000 metre models and OEM (no housing) versions are also available. Syrinx's transducers have been designed, built and tested in-house to provide maximum performance, and can be individually replaced, reducing ownership costs and repair time. The entire array is water blocked meaning that should damage occur to the transducer array, the unit's electronics are isolated from water ingress.

SPRINT-NAV; DVL AND INS INTEGRATION

For the ultimate integration, SPRINT and Syrinx are also now available as a single combined unit with integral pressure sensor. The result is one of the smallest inertial DVL instruments available on the market suitable for almost any ROV and survey task.

EASY EXPORT

Syrinx is designed and manufactured entirely in the UK. This means it can be exported to countries within the European Union and selected others (including the USA) without the need for a specific export licence.

(Above) Syrinx is configured and live data viewed through the embedded DVL manager.

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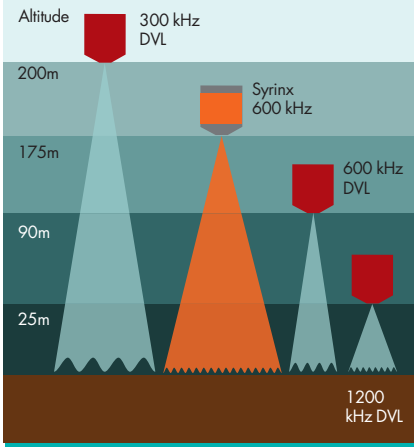
Vehicle Integration
Syrinx's lightweight, 4,000 metre rated titanium housing is simple to install on new ROVs and AUVs or retrofit to existing ones.

Summary Specifications

Operating Frequency	600 kHz
Long Term Accuracy	±0.12% ±0.1 cm/s
Min/Max Altitude	0.4 m / 175 m
Depth Rating	3,000 m, 4,000 m or 6,000 m
Housing Material	Aluminium or Titanium
Communications	Concurrent RS232 and Ethernet
Data Output Rate	25 Hz max
Internal Logging	32 GB Internal



DVL-INS integration
When combined with Syrinx DVL, Sonardyne's subsea Lodestar AHRS and SPRINT INS provide unprecedented levels of performance in a single offering for ROV and AUV guidance and survey. Choose between co-located separate instruments (shown) or an all-in-one instrument, SPRINT-Nav.