Datasheet
Syrinx – Doppler Velocity Log

The Syrinx Doppler Velocity Log (DVL) is a class leading DVL that builds on Sonardyne's range of acoustic devices by bringing to market a high-integrity, high-performance instrument. Syrinx is a standalone navigation instrument or can be integrated into SPRINT Nav or third party navigation systems.

Syrinx DVL is available in two frequencies: 600 kHz or 400 kHz for higher altitude tracking.

Syrinx gains performance advantages by using both doppler and correlation technology in environments where each is best suited.

Advanced processing techniques avoid any loss in output measurements due to undulating and sharp roll off terrain, including near vertical gradients.

Adaptive signalling utilises the best signal type for the environment and terrain, giving class leading performance at low and high altitude.

Syrinx can output data of different formats simultaneously; this reduces the requirement of more than one DVL on the ROV, saving on weight and costs.

Optional ADCP and DVL+ADCP modes are available for standalone profiling, or concurrent DVL navigation and velocity profiling within the same instrument. This capability can be used without sacrificing navigation accuracy when combined with an INS.

When Syrinx is integrated with SPRINT INS, inertial velocities can be used to correct ADCP profiles for vessel speed in the absence of bottom lock or in moving bed conditions. This unique capability allows unbiased profile velocities and navigation through the entire water column.

The ADCP data uses an extended PD0 format containing acoustic, GPS and inertial data. Live or file data can be inspected and processed using the Echo Observer for Syrinx software package, which can be included with the ADCP upgrade.

Sonardyne have developed the transducers to be singularly interchangeable, dramatically reducing maintenance costs and times. An internal bulkhead is fitted to prevent water ingress if a transducer is badly damaged. Both 4,000 and 6,000 m depth options are available.

Key Features

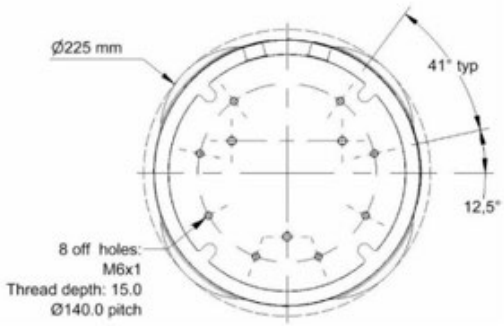
- Class-leading 400/600 kHz DVL
- Reliable adaptive bottom lock
- Capsule case design built around field proven USBL array capsules
- Concurrent Ethernet and serial comms
- Individually replaceable transducers
- On-board web interface for configuration and diagnostics
- Up to 25 Hz DVL ping rate
- 0.4 to 230 m DVL operation range
- Tight integration to Sonardyne SPRINT INS, providing unmatched DVL aided navigation even in challenging bottom lock conditions
- ADCP mode with up to 120 m range
- Up to 4 Hz ADCP ping rate
- Tight integration with SPRINT INS provides ADCP profiles independent of vessel motion, even without bottom lock or under moving bed conditions
- Internal bulkhead prevents water ingress if a transducer is damaged

Specifications

Syrinx – Doppler Velocity Log

Type 4531/4561 – 4,000 m

Type 6531 – 6,000 m



Feature			8275-4531/6531 600 kHz	8275-4561 400 kHz
Operating Frequency			600 kHz	400 kHz
Bottom Velocity – Single Ping Precision (Standard Deviation @ 1 m/s[1])			±0.22 cm/s	±0.28 cm/s
Long Term Accuracy			±0.12% ±0.1 cm/s	±0.22% ±0.1 cm/s
Minimum/Maximum Altitude			0.4/175 m[2]	0.4/230 m
Velocity Range			>10 m/s	
Velocity Resolution			0.01 cm/s	
Data Output Rate			25 Hz maximum	
Water Reference Velocity	Accuracy		±0.2% ±0.1 cm/s	
	Layer Size		Selectable	
	Minimum/Maximum Range		0.4/80 m	0.4/120 m
ADCP	Profiling Range		0.4–80 m	0.4–120 m
	Velocity Range & RMS (Along Beam)		Up to ±11.2 m/s ±0.4% of measured value	
	Maximum Number of Cells		255	
	Maximum Ping Rate	ADCP	4 Hz	
		DVL+ADCP	2.5 Hz	
Beam Width			±1.0°	±1.3°
Beam Angle			30°	
Transmit Source Level (dB re 1 µPa @ 1 m)			217 dB (maximum)	
Sensors	Temperature		-5 to 40°C	
	Pitch/Roll (Optional)		±0.5°	
	Pressure (Optional)		±0.1% full scale	
Configuration (Array)			4-beam array @ 30° beam angles	
Communication and Logging	Communications		Dual RS232, multi-port Ethernet (TCP & UDP)	
	Trigger Inputs		3–12 V rising or falling edge configurable	
	Internal Logging		32 GB internal memory	
Output Telegrams			Sonardyne proprietary, PD0, PD3, PD4, PD6, PD13, SDDBT Simultaneous telegram output	
Voltage (dc Input)			24 V (±10%)	
Average Power (Typical)			10 W nominal	
Depth Rating			4,000 or 6,000 m array	
Operating Temperature			-5 to 55°C	
Storage Temperature			-20 to 55°C	
Mechanical Construction			Titanium	
Connector Type			Subconn	
Dimensions (Height x Diameter)	4000 m		189 x 225 mm	189 x 225 mm
	6000 m		204 x 225 mm	n/a
Weight in Air/Water[3]	4000 m		12.1/7.6 kg	11.5/6.7 kg
	6000 m		14.7/8.2 kg	n/a

[1] Standard deviation refers to proven single-ping true horizontal velocity precision, specified at 20–30 m altitude.
[2] 150 m bottom acquire range, up to 175 m once bottom locked in optimal seabed conditions.
[3] Estimated weights.

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Specifications subject to change without notice – 06/2021