

# Syrinx DVL



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, highperformance 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.

## Specifications

<b>Product</b>	Syrinx DVL
<b>Country of origin</b>	UK
<b>Manufacturer</b>	Sonardyne
<b>Material</b>	???

## 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
- On-board web interface for configuration and diagnostics
- Tight integration with SPRINT INS provides ADCP profiles independent of vessel motion, even without bottom lock or under moving bed conditions
- Up to 25 Hz DVL ping rate
- 0.4 to 230 m DVL operation range
- ADCP mode with up to 120 m range
- Up to 4 Hz ADCP ping rate
- Individually replaceable transducers
- Internal bulkhead prevents water ingress if a transducer is damaged
- Tight integration to Sonardyne SPRINT INS, providing unmatched DVL aided navigation even in challenging bottom lock conditions

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 stand-alone current 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 PDO 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.



## Specifications

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 m2	±0.1% full scale
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	Up to ±5.6 m/s ±0.4% of measured value	Up to ±8.4 m/s ±0.4% of measured value
	Maximum number of cells	255	
	Maximum ping rate	ADCP 4 Hz DVL+ ADCP 2.5 Hz	
Beam with		±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	±0.5°	
	Pressure	±0.1% full scale	
Configuration (arry)		4-beam array @ 30° beam angles	±0.1% full scale
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	4.000 m	189 x 225 mm	189 x 225 mm
	6.000 m	204 x 225 mm	n/a
Weight in air/water <sup>3</sup>	4.000 m	12.0/9.1 kg	11.3/8.5 kg
	6.000 m	14.4/10.9 kg	N/A