PRODUCT BRIEF

Types 8021/8023

Fusion USBL Transceivers

GENERAL DESCRIPTION

Type 8023

Type 8021

Tilted Array Transceiver

Sonardyne's 'Plane Array' family of transceivers are the latest Ultra-Short BaseLine (USBL) transceivers from Sonardyne. Developed specifically for Fusion, the new transceivers support the use of modern broadband, spread-spectrum signals, offering improved noise immunity, increased dynamic range and greater accuracy.

The Type 8021 transceiver offers a hemispherical pattern of acoustic coverage whilst still ensuring rejection of vessel noise. The transceiver allows tracking of targets from below and to the side of the vessel and it is suitable for a wide variety of survey tasks such as towfish tracking and ROV positioning.

The Type 8023 transceiver is optimised to receive signals arriving within a $\pm 50^{o}$ cone. Any noise generated outside of this area, for example by thrusters, is attenuated further, therefore improving the signal to noise ratio and so the positioning accuracy. In practise, this has been proven to allow the accurate positioning of the noisiest vessels. On quieter vessels, it enables even deeper depths to be achieved.

The all new hardware platform on which the Fusion USBL transceivers are based means that the units can be easily upgraded remotely via a serial interface. They can also be used as Medium Frequency Long BaseLine (LBL) transceivers when required. This removes the cost and inconvenience of installing and setting up a separate LBL transceiver when the need arises.

Key Features

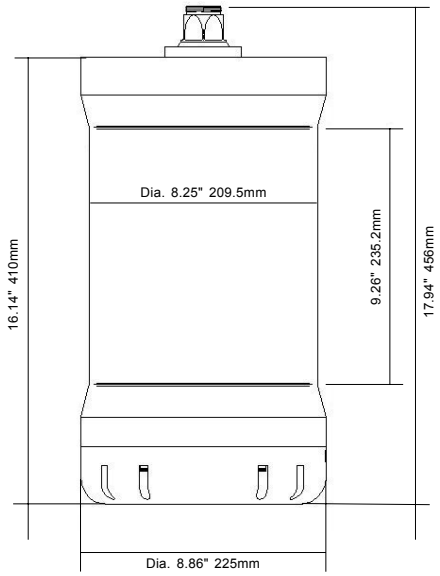
- Choice of transceivers depending on operating environment, water depth and vessel
- Operates as an LBL transceiver for all MF frequency operations
- Remote firmware upgrade via serial interface
- Improved noise immunity and analysis
- Non-Sonardyne frequencies supported

Designed for Fusion

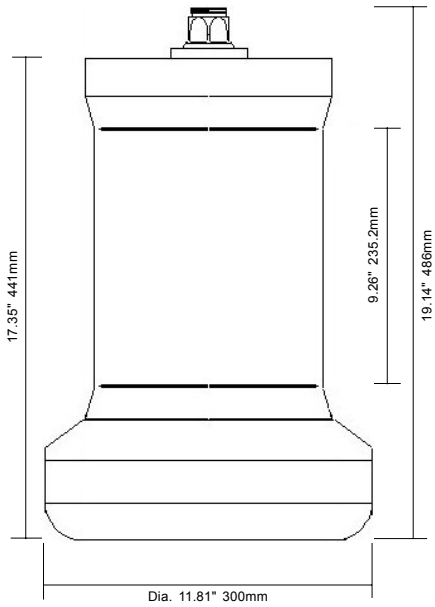
Sonardyne SOUND IN DEPTH

TECHNICAL SPECIFICATION

Type 8021



Type 8023



Transceiver Type		Type 8021	Type 8023
Frequency		MF (18-36kHz)	MF (18-36kHz)
Electrical	Maximum Power	36-72V DC - 25 W continuous	36-72V DC - 25 W continuous
	Communication	RS 485 baud rate switchable	RS 485 baud rate switchable
Transceiver Performance	Operating Range	Up to 7,000 metres	Up to 7,000 metres
	Acoustic Coverage	±90°	±50° Optimised for deepwater operations from noisy vessels
	Range Accuracy	Better than 0.2 metres	Better than 0.2 metres
	Positioning Repeatability	All transceivers tested to better than 0.1% of slant range 1 Drms	All transceivers tested to better than 0.1% of slant range 1 Drms
Weight in Air / Weight in Water (Non-Tilted)		28Kg / 13.5Kg	41Kg / 20Kg
Maximum Dimensions		225mm (D) x 456mm	300mm (D) x 486mm

System Performance	(Including GPS, attitude and heading sensors and transceiver deployment)
Proven System Accuracy	**0.27%** 1 Drms slant range (63% of fixes within 2.7m radius in 1,000 metres water depth) or **0.20%** 1 Sigma slant range (39.4% of fixes within 2m radius in 1,000 metres water depth)
Note	The absolute accuracy of the system is dependent upon the quality of attitude and heading sensors, beacon source level, vessel noise, water depth, the mechanical rigidity of the transceiver deployment machine and proper calibration of the total system using CASIUS

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