

## Datasheet

# AvTrak 2 (Omni-Directional Version)



### Description

AvTrak 2 is a second generation acoustic navigation and communications instrument designed to form part of an integrated AUV navigation system. It combines the functions of transponder, transceiver and telemetry link in one low power device that has been designed to meet the requirements of a wide variety of AUV mission scenarios and vehicle types.

The unit operates in Sonardyne's Wideband® or HPR 400 Series tone modes with a variety of other systems and transponders. It is also fully compatible with Sonardyne's family of survey quality LBL and USBL navigation systems.

AvTrak has a comprehensive yet easy to use command language that allows the AUV to undertake simultaneous LBL ranging, USBL tracking via a surface vessel and robust telemetry for AUV to vessel and AUV to AUV communications.

This capability can be used to provide absolute position reference data to periodically update the AUV's inertial navigation system.

The instrument is available in a variety of configurations including depth ratings to 7,000 metres and a screened chassis option for mounting within the AUV's own pressure vessel. The Type 8065 is a omni-directional unit with integral or remote transducers. This flexible configuration is intended both to assist the AUV manufacturer with mounting of the instrument with the AUV and to ensure the highest levels of acoustic performance. A directional AvTrak 2 is also available (see Type 8140 datasheet).

An internal 'watchdog' feature monitors AUV comms activity and can switch the unit into transponder mode for emergency relocation. This feature is supported by an internal back up battery that provides power should the main AUV power fail.

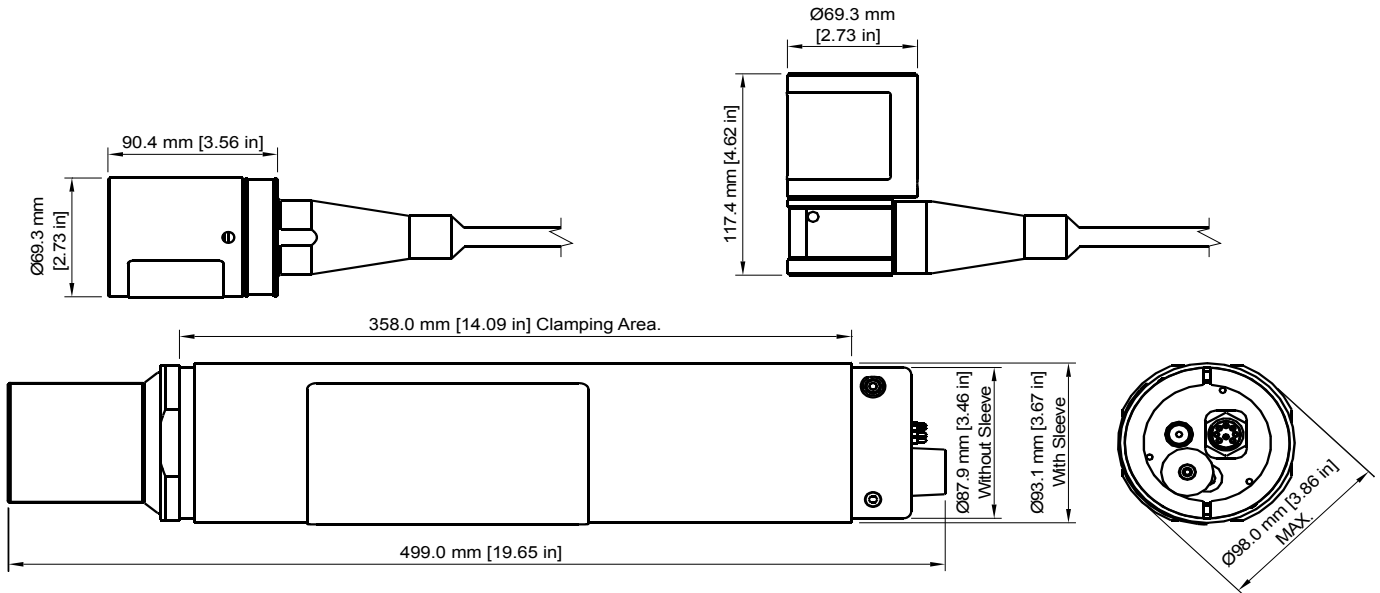
A number of acoustically controlled digital I/O lines are also provided for mission abort and emergency ballast jettison control.

### Key Features

- Incorporates Sonardyne's latest Wideband acoustic navigation and telemetry technologies
- Compatible with Fusion USBL for surface vessel combined positioning and telemetry (transponder mode)
- Supports AUV to AUV ranging and telemetry (transceiver mode)
- Emergency relocation mode
- Digital I/O, e.g. for mission abort and ballast jettison
- Integral depth and temperature sensors
- Extremely low power consumption
- Internal back-up battery with external trickle charge
- Configurable as a surface vessel unit for AUV ranging and telemetry

# Specifications

## AvTrak 2 (Omni-Directional Version)



System Features		Type 8065	
Frequency Band		MF (19-36kHz)	
Source Level (re 1 $\mu$ Pa @ 1m)	Omni	188 dB	
Range Measurement	Wideband	1cm / 3cm	
Repeatability / Accuracy	Tone HPR 400 series	10cm / 30cm	
Acoustic Telemetry	Sonardyne Messaging Service (SMS)	1,500 Baud / 600 bits per second (User rate)	
Compatible Transponders (Transceiver mode)		Wideband Sub-Mini (WSM), Wideband Mini Transponder (WMT), Compatt 5, HPR 400 series	
Digital Input / Output		4 plus Event sync	
Internal Sensors		Pressure and Temperature	
Communications Interface		RS232 / 485 (9,600 – 115K2 Baud), Event sync	
External Supply Voltage		24-50V	
Power	Sleep	<700mW	
	Active (Listening)	<2W	
	Peak (TX)	<50W	
Emergency Internal Battery Pack	Sleep	<50mW Approx 30 days	
	Continuous 4 second Interrogation	<500mW Approx 2 days	
Dimensions and Weights (Air / Water)	3,000 Metre Housing	499mm x 93mm	5.1kg / 2.2kg
(# = with connector and battery)	5,000 Metre Housing	518mm x 93mm	7.0kg / 3.6kg
	7,000 Metre Housing	518mm x 93mm	7.0kg / 3.6kg
Options	Navigation	Array Calibration/Remote Tracking	
	Modem	(Rx 100-1000bps) (Tx 100-8000bps)	

### Remote Transducer (3,000 Metre Housing)

Transducer Beam Pattern		Omni-Directional
Dimensions	Straight / Right Angle	90.4mm x 69.3mm / 69.3mm x 117.4mm
Weight in Air / Water		2.5kg / 1.1kg