

Datasheet

AvTrak 6 Transceiver



AvTrak 6 is an acoustic navigation and communications instrument designed to form part of an integrated AUV tracking and navigation system.

It combines the functions of transponder, transceiver and telemetry link in one low power unit that has been designed to meet the requirements of a wide variety of AUV mission scenarios and vehicle types.

The unit operates in Sonardyne Wideband[®]2. It is also fully compatible with our family of survey quality LBL and USBL navigation systems.

AvTrak 6 is available in 3,000 m, 5,000 and 7,000 m depth versions.

AvTrak 6 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 with integral or remote transducer options. This flexible configuration is intended both to assist the AUV manufacturer with mounting of the instrument within the AUV and to ensure the highest levels of acoustic performance.

AvTrak 6 supports a Sonardyne Messaging Service (SMS) that allows custom payloads to be transferred to and from any 6G[®] transceiver. This allows for vehicle configuration or USBL position fixes to be acoustically sent to the vehicle or for status messages to be retrieved from the topside system.

There is an option to include a HPR 400 series tone for compatibility with a variety of other acoustic systems and transponders and another option to enable a RSPSK Modem upgrade for large volume data transfers.

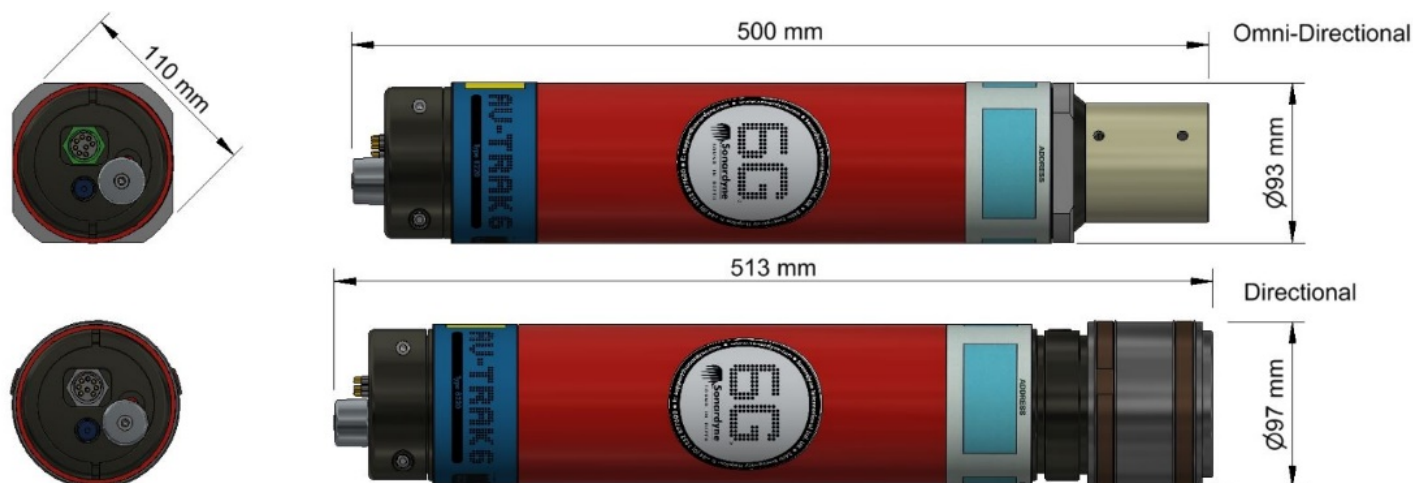
A number of acoustically controlled digital I/O lines are also provided for custom use, typical applications include mission abort and emergency ballast jettison control.

Key Features

- Incorporates Sonardyne Wideband 2 acoustic navigation and telemetry technologies
- Compatible with Ranger USBL for surface vessel combined positioning and telemetry
- Supports AUV to AUV ranging and telemetry (transceiver mode)
- Emergency relocation mode
- Custom I/O for mission abort and ballast jettison
- Pressure 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 6 Transceiver



Features		Type 8220-3111	Type 8220-5212	Type 8220-7212
Depth Rating		3,000 m	5,000 m	7,000 m
Operating Frequency		MF (19–34 kHz)	MF (19–34 kHz)	MF (19–34 kHz)
Transducer Beam Shape		Omni-directional	Directional	Directional
Transmit Source Level (re 1 μ Pa @ 1 m)	High Power	187 dB	193 dB	193 dB
	Low Power	181 dB	187 dB	187 dB
Tone Equivalent Energy (TEE) ¹ WBv2+	High Power	193 dB	199 dB	199 dB
	Low Power	187 dB	193 dB	193 dB
Range Precision		Better than 15 mm	Better than 15 mm	Better than 15 mm
Depth Sensor		\pm 0.5% full scale	\pm 0.5% full scale	\pm 0.5% full scale
Communications Interface		RS232 (9,600–115,200 baud)		
External Supply Voltage		24 or 48 V dc (\pm 10%)	24 or 48 V dc (\pm 10%)	24 or 48 V dc (\pm 10%)
External Power	Sleep	\sim 650 mW	\sim 650 mW	\sim 650 mW
	Wideband Listening	\sim 1 W	\sim 1 W	\sim 1 W
	Battery Charging	6 W	6 W	6 W
	Peak (During Transmission)	<50 W	<50 W	<50 W
Battery Life (Li-ion 15 V)	Listening	30 days	30 days	30 days
	Continuous 5 Sec Interrogation	Approx. 6 days at low power		
Operating Temperature		-5 to 40°C	-5 to 40°C	-5 to 40°C
Storage Temperature		-20 to 55°C	-20 to 55°C	-20 to 55°C
Mechanical Construction		Anodised aluminium alloy and plastic		
Dimensions (Diameter x Length)		93 x 500 mm	97 x 513 mm	97 x 513 mm
Weights in Air/Water ²		5.1/2.2 kg	7.0/3.5 kg	7.0/3.5 kg
Options		Remote, cable connected transducer Right-angle connector	Right-angle connector	Right-angle connector

¹ WBv2+ signals are 4x the duration of Sonardyne tone signals (WBv1 & WBv2 are 2x). The TEE figure shows the operational performance when comparing Wideband and tone systems.

² Estimated weights.