applied acoustics
underwater technology

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1150 Series Seabed Beacon



Key features

- aae Sigma 2 bi-directional spread spectrum technology
- User configurable Tx power and Rx Gain for increased operational life and optimal acoustic performance
- Multi-Fire common interrogate capability
- MiQ data telemetry functionality
- Directional or omni-directional beam pattern, depending on application
- Survival depth to 3000 m

Applications

- DP reference beacon requiring long term deployment
- General purpose tracking and positioning applications for deeper water applications or in an acoustically challenging environment

Seabed Series Beacon Overview

The 1150 Series Seabed Beacons have long life battery options that make them ideal for long term reference points, USBL calibration beacons and Dynamic Positioning reference markers.

1150 Series Seabed beacons incorporate applied acoustics' proprietary Sigma acoustic protocols proven for use with aae's USBL tracking systems, other manufacturers' USBL systems as well as those using 'narrow band' tone signaling.

Technical Specification

MODEL TYPES & PHYSICAL SPECIFICATION

Housing material; Hard anodised aluminium, with protection cages

Model	Beam Pattern	SPL*	Survival Depth	Diameter	Length	Weight in Air / Water
1159	±90°	188 dB	3000 m	125 mm	1095 mm	22.80 kg / 11.00 kg
1153H	±30°	200 dB	3000 m	125 mm	1095 mm	22.80 kg / 11.00 kg

Electrical Specification

BATTERY	
Battery Type	Rechargeable. NiMH as standard
Listening Life	120 days
Operational Life, aae Sigma 2	Dependent on pulse rate and operational mode Spec at max operating power, position only. Operation life will increase with lower power and decreased repetition rates. 1159: >400 hours at 1.0 pps 1153H: >100 hours at 1.0 pps

Configuration

Transmit Frequency Range	21 – 31 kHz
Receive frequency range	17 – 31 kHz
Turnaround time	Auto select upon protocol. User defined
Transmit pulse width	Auto select upon protocol
Transmit power level	User programmable
Receiver Gain	User programmable
Refresh rate	>1 Hz
Multi-Fire	10 IDs
MIQ data telemetry	Navigation + Data @ 800 Bps payload Fixed RS232 interface @ 9600, 8, N, 1

External Inputs

Connector type	MCBH10M 10-way connector
Responder key	+ 5 to 25 Volts
External Power	22 to 35 V DC@120 mA
Charge	1083 Multi-Charger, typical cycle charge time, 20 hours.

USBL Compatibility

aae 1150 Series beacons use Tone, Chirp, MFSK, DSSS and FHSS as transmission/reception protocols, allowing cross-compatibility with many USBL systems, including:

- Nexus 2 / Pyxis systems: Sigma 1, Sigma 2, Sigma 3 spread spectrum systems
- aae Vesta: Sigma 3 digital protocol
- aae Nexus Lite / Alpha: Tone systems
- Exail / iXblue: GAPS USBL
- Kongsberg: HiPAP

Options

- Compatibility with USBL systems not listed across
- Non-rechargeable batteries (alkaline)
- Depth sensor 100 m/300 m/1000 m/2000 m/4000 m (adds D suffix to model number)
- Floatation Collar

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Due to continual product improvement specification information may be subject to change without notice.
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