# Accelerometer Transmitters

Used in wide variety of applications that require measurement of any activity of tagged animals as they move within your receiver array

Accelerometer transmitters measure the activity of a free ranging animal in nature by transmitting 3D acceleration of your tagged animals as they move within your receiver array. Accelerometer tags operate in one of two modes:

» Activity Algorithm - measures the general activity index of the body of a fish, or

» Tailbeat Algorithm - measures the undulation of a specific appendage (usually the tail)

The acceleration signal is measured in terms of m s^{-2} (SI units) and is a vector quantity that is a result of measuring acceleration on two axes (X,Z) for the tailbeat algorithm) or three axes (X,Y,Z) for the activity algorithm).

V16A/AT
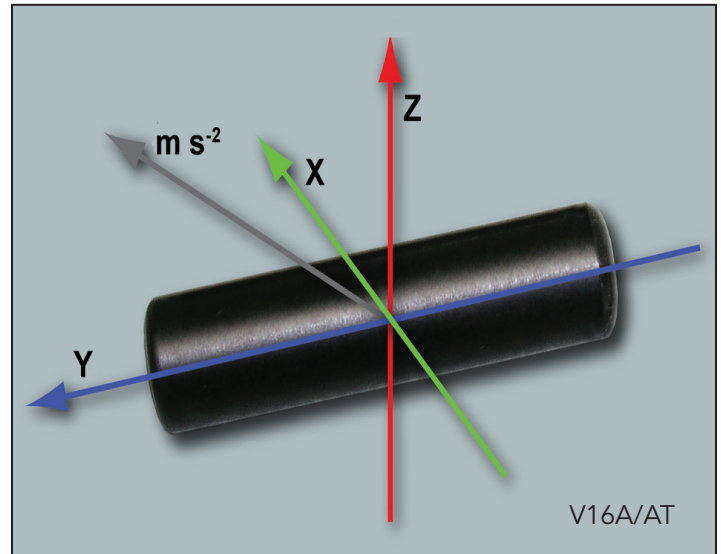
Use Cases

» Measure swim speed via tail beat acceleration

» Detect mortality from events such as predation, seismic blasting, toxic spills, etc.

» Understand feeding, spawning, and nocturnal/diurnal activities

» Study activity responses to changing oxygen, salinity and temperature in the environment

Sensor Options

V9A and V13A accelerometer tags are also available with a pressure sensor option (V9AP, V13AP) and the V16A has a temperature sensor option (V16AT).

V9AP

V16AT Temperature Sensors		
Range	Accuracy	Resolution
-5 to 35 °C	±0.5 °C	0.15 °C
-4 to 20 °C	±0.5 °C	0.1 °C
0 to 40 °C	±0.5 °C	0.15 °C
10 to 40 °C	±0.5 °C	0.12 °C

V9AP and V13AP Pressure Sensors at Room Temperature		
Max Depth	Accuracy	Resolution
17 m	±0.5 m	0.075 m
34 m	±0.5 m	0.15 m
68 m	±1.0 m	0.3 m
136 m	±1.0 m	0.6 m
204 m	±1.0 m	0.9 m
290 m	±2.0 m	1.28 m

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Pair With

Accelerometer transmitters are used as a system with all Vemco 69 kHz receivers:

» VR2Tx Transponding Receiver

» VR2AR Transponding Receiver and Acoustic Release

» VR2W-69 kHz Receiver

» VR4-UWM (Underwater Modem)

» VMT (Vemco Mobile Transceiver)

Range Test Tag

Range test tags can be provided at the same output power as your study to conduct in situ range testing. They are configured with a FIXED delay and an on-time of two weeks as a precaution to ensure the tag will expire within a reasonable period of time if accidentally dropped overboard.

Case Option

The V16A/AT comes in two case styles. The internally implanted unit comes in an epoxy case with rounded ends. The externally mounted unit is made of PVC with attachment holes at either end and is 22 mm longer than the internal V16 model.

Expected Battery Life *		V9A		V9AP		V13A		V13AP		V16A		V16AT	
Delay (s)	Samp (s)	Low	High	Low	High	Low	High	Low	High	Low	High	Low	High
60	25	214	116	282	134	537	246	412	216	3650	2231	3650	2380
120	35	330	197	454	235	730	433	635	367	3650	3618	3650	3650
240	45	524	338	730	414	730	730	1001	630	3650	3650	3650	3650

The life span of an accelerometer tag depends on output power (high or low), the delay between ping trains (in seconds) and acceleration measurement settings.

PRODUCT SPECIFICATIONS

Tag Model	V9A		V9AP		V13A		V13AP		V16A/AT	
Power (L/H)	2L	2H	2L	2H	1L	1H	1L	1H	6L	6H
Length (mm)	33	33	35	35	34	34	36	36	95	95
Weight in air (g)	5.0	5.0	5.3	5.3	9.7	9.7	10.4	10.4	34	34
Power output (dB re 1uPa @1m)	146	151	146	151	147	152	147	152	152	158
Measurement range m s^{-2} (Measurement range of the onboard acceleration sensor: ±39.2										
RMS vector range m s^{-2} for activity algorithm (RMS acceleration range transmitted acoustically: 3.4 or 4.9										
RMS vector range m s^{-2} for tailbeat algorithm (RMS acceleration range transmitted acoustically: 4.9										

Ready to Get Started? Contact us today.

About Innovasea

Innovasea designs the world's most technologically advanced aquatic solutions for fish tracking and builds them to withstand the toughest conditions. It's all driven by a commitment to make our ocean and freshwater ecosystems sustainable for future generations. Today. Tomorrow. For life.