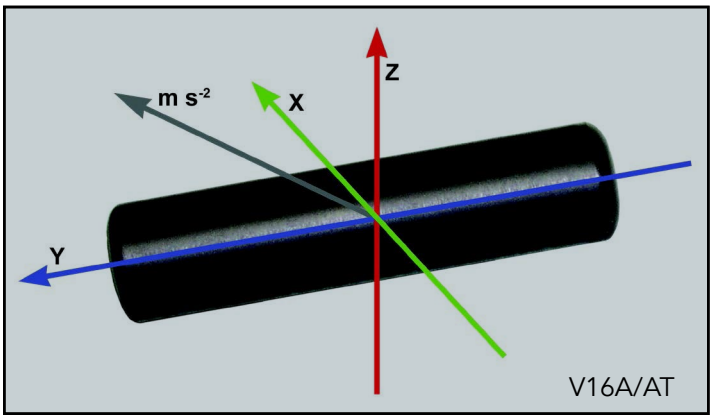
Accelerometer Transmitters

Used in wide variety of applications that require measurement of any activity of tagged animals as they move within a 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 a receiver array. Accelerometer tags operate in one of two modes:

- Activity Algorithm - measures the general activity index of the body of a fish
- Tailbeat Algorithm - measures the undulation of a specific appendage (usually the tail)

The acceleration signal is measured at 12.5 Hz 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

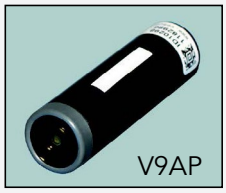
Use Cases

- 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

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

Sensor Options

The V7A, V9A and V13A tags are also available with a pressure sensor option (V7AP, V9AP, V13AP) and the V16A has a temperature sensor option (V16AT).


V9AP

V7AP, 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

Pair With

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

- NexTrak R1 Receiver
- VR2Tx Transponding Receiver
- VR2AR Transponding Receiver and Acoustic Release
- VR4-UWM (Underwater Modem)

Range Test Tag

Range test tags can be provided at the same output power as your study to conduct in situ range tests. 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 18 mm in diameter and 22 mm longer than the internal V16 model.

Estimated Battery Life (Days) *		V7A		V7AP		V9A		V9AP		V13A		V13AP		V16A		V16AT	
Delay (s)	Samp (s)	Low	High	Low	High	Low	High	Low	High	Low	High	Low	High	Low	High	Low	High
60	25	43	29	67	38	158	101	233	126	309	190	449	234	3650	2062	3650	2350
120	35	62	45	101	63	236	164	363	216	461	311	697	402	3650	3264	3650	3650
180	45	74	57	123	82	286	210	450	287	557	339	730	535	3650	3650	3650	3650

** The life span of an accelerometer tag depends on output power (high or low), the delay between ping trains (seconds) and acceleration measurement settings. Shelf life will affect tag life and therefore tags should be deployed within a reasonable amount of time from purchase. Please contact your Sales Representative to determine the time frame within which your tags should be deployed.*

PRODUCT SPECIFICATIONS

Tag Model	Diameter (mm)	Length (mm)	Weight in Air (g)	Weight in Water (g)	Power Output dB re 1µPa @1m (Low / High)
V7A-4x	7	21.5	1.8	0.9	137 / 141
V7AP-4x	7	23	1.9	1.1	137 / 141
V9A-2x	9	33	5.0	2.9	146 / 151
V9AP-2x	9	35	5.3	3.0	146 / 151
V13A-1x	13	34	9.7	4.8	147 / 152
V13AP-1x	13	38.5	10.7	5.4	147 / 152
V16A/AT-6x	16	95	34	14.9	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.

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