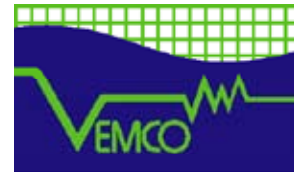


V13 Coded Transmitter



A division of AMIRIX

Implantable transmitter for small and juvenile species

The V13 coded transmitter, 13 mm in diameter, was developed to provide researchers with the means to track and determine the behaviour patterns of small and juvenile fish. The V13 can function as a simple pinger for location only or can be equipped with sensors to include depth and/or temperature data. When V13 transmitters are used with the VR2 and/or VR3 receiver, they can help meet the challenges of tracking large numbers of fish over large areas. The V13 can also be tracked using the VR28, the VR100, or VR60 (with Option 07 version 2.01) receivers, or the VRAP system.



The V13 transmitter

Coded Mode

“Coded” transmitters send acoustic pings at 69 kHz that are infrequent and random about an average delay. This ping train includes an ID number which permits identification of the specific tag along with the sensor telemetry data.

For applications such as site residency studies and automated monitoring of migrations, coded transmissions are desirable because of significantly increased battery life and the large number of unique tags that can be used on a single frequency.



The V13 transmitter is activated and deactivated using an internal magnetic switch. The transmitter is activated when the magnet is removed from the side of the transmitter. The transmitter is deactivated by replacing the magnet on the white location marker.

V13 Coded Tag Sensor Options

For research requiring temperature and depth information, V13 tags can be equipped with temperature, V13T, or depth, V13P, or both temperature and depth sensors, V13TP. V13P pressure transmitters are available in the following full scale pressure options: 50, 100 and 200 meters. V13T temperature transmitters are available in four temperature ranges: -5 to 35°C, -4 to 20°C, 0 to 40°C and 10 to 40°C. (See table following page.)

Physical Specifications

		Battery Option:	
		1L	1H
V13	Length (mm)	36	36
	Weight in air (g)	11	11
	Weight in water (g)	6	6
	Power Output (dB re 1uPa @1m)	147	153
V13TP	Length (mm)	45	45
	Weight in air (g)	12	12
	Weight in water (g)	6	6
	Power Output (dB re 1uPa @1m)	150	158

Stated tag length, weight and output power are nominal. Small manufacturing variations can be expected.

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Temperature Sensor		
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

Pressure Sensors (at room temperature)		
Max Depth	Accuracy	Resolution
50 m	±2.5 m	0.22 m
100 m	±5 m	0.44 m
200 m	±10 m	1.2 m

Available Frequencies

Coded V13 transmitters are available at 69 kHz (standard).

Range Testing Tag

Range testing tags can be provided, at the same output power as your proposed study, to be used to conduct in situ range testing. Range test tags are configured with a FIXED delay and an on-time of two weeks. This is a precautionary measure to ensure that the tag will expire within a reasonable period of time if accidentally dropped overboard. The tag on-time can be reset using the external magnet.

Programmable ON/OFF

V13 coded tags can be programmed to turn off for extended periods of time and reactivated later. This is useful to extend the life of the tag. Consult with your VEMCO sales representative for more details.

How to Order V13 Coded Transmitters

When ordering the V13 transmitter, specify the following:

- [1] Output power level (high or low)
- [2] Nominal delay
- [3] If a depth sensor (V13P) is required, what is the maximum depth (50, 100, or 200 meters)?
- [4] If a temperature sensor (V13T) is required, what is the temperature range (-5 to 35°C, -4 to 20°C, 0 to 40°C or 10 to 40°C)?
- [5] Is this a Range Testing Tag?
- [6] Quantity of tags

Expected Battery Life

The life span of the V13 depends on the power output (low or high), the delay between transmissions (in seconds), and the types of sensors included. The V13 coded transmitter has six standard delays available, which are listed in the tables.

V13 pingers incur a small current drain prior to activation. Tag life will be reduced if tags are shelved for a significant period of time (months). V13 pingers should be activated within one (1) year of delivery. Contact VEMCO for information.

Projected Battery Life for 1L (days)				
Nominal Delay (seconds)	V13-1L	V13T-1L	V13TP-1L	V13P-1L
30	334	334	305	280
60	616	614	562	518
90	879	874	802	742
120	1123	1116	1028	952
180	1565	1554	1439	1339
240	1952	1939	1803	1685

Projected Battery Life for 1H (days)				
Nominal Delay (seconds)	V13-1H	V13T-1H	V13TP-1H	V13P-1H
30	101	102	99	96
60	191	192	186	181
90	279	280	272	265
120	366	366	356	346
180	533	532	518	505
240	693	692	674	656

Notes: The transmission rate varies randomly ±50% about the nominal delay value. For example, a 30 second nominal delay indicates that the tag transmits randomly every 15 to 45 seconds.

The projected battery life is an estimate and users will experience a decrease in battery life if their tags are operating in extreme warm or extreme cold temperatures.

VEMCO transmitters are programmed to stop transmitting when they reach their stated battery life. This ensures that tags will operate at published specifications until expiration.

VEMCO tags are warranted to be free from defects in material and workmanship for one year from date of delivery.

Tags can be programmed for shorter lives, if required.

The tables above are for our most popular nominal delay settings. Please contact VEMCO for additional information regarding battery life for other nominal delay settings.

