SPOT TAGS PRODUCT SHEET

Standard SPOT-293 configuration

The Smart Position or Temperature Transmitting (SPOT) tag is our smallest Argos transmitting tag. It is designed specifically for the marine environment.

The SPOT is available in a variety of shapes optimized for deployment on seals, turtles, large and small cetaceans, penguins, and albatross. The SPOT's size and weight also make it suitable for other non-marine applications.

Transmitted data
In addition to Argos locations, the SPOT can transmit temperature data in the form of histograms. These "time-at-temperature" histograms report the relative time a study animal spent within specified temperature ranges. The SPOT can also provide dry timelines which report the percentage of time the tag is dry for each hour of the day.

Size, weight and pressure resistance
Electronic components are fully cast in epoxy and all tags are individually tested to their maximum depth rating. Many configurations are available to suit your study requirements. The smallest configuration weighs less than 30g in air.

Battery and deployment length
Many battery configurations are available for the SPOT tag. For position-only deployments, a small single-battery tag is capable of providing approximately 33,000 transmissions. The standard SPOT-293A, as shown, provides over 200,000 transmissions. As a general rule, a budget of 250 transmissions per day is sufficient to provide several daily locations via Argos. Therefore, a single small-battery tag provides locations for approximately 140 days. The standard SPOT-293A provides locations for approximately 860 days. Several SPOT configurations provide locations for 1000+ days.

For position and temperature (or percentage-dry timeline) deployments, the number of expected transmissions should be decreased by one third. Actual results are dependent on animal behavior and environmental temperature.

User-defined parameters
All parameters are user-programmable. Researchers are able to set the parameters that control how and when the SPOT stores and transmits its data.

Extending deployment length
The SPOT further extends deployment length by:

- Incorporating a wet/dry sensor that limits transmissions to when the tag is at the surface.
- Allowing duty-cycling by day or month.
- Limiting total number of transmissions per day.
- Limiting transmissions to hours when the satellite is likely to be in view.

SPOT-311

This is a small representation of our available tags. Tag features and specifications subject to change without notice.

SPOT Tags Product Sheet – continued

Temperature data collection
Temperature is measured from -40 to +60C, with a ±0.2 degree tolerance across the temperature range. Temperature is reported in "time-at-temperature" histograms. The temperature range is set up for a maximum of 12 bins, as well as start times for histogram collection.

Percentage dry timelines
The tag can be configured to generate the percentage (10% resolution) of each hour of each day when the wet/dry sensor reads dry. This is useful for both haulout behavior studies and for determining the time spent at the surface for pelagic animals.

Tag activation
The SPOT's can be turned on and off with a magnet. The LED flash sequence indicates whether the tag is deployed or in stand-by. When in standby mode, tags will "auto-start" when submerged in sea water for at least 15 seconds.

Controller features
The operating code of the SPOT can be upgraded. This means it can always have the most up-to-date version of on-board software, regardless of when the tag was purchased.

Transmitter
The SPOT incorporates a specialized transmitter developed by Wildlife Computers. When configured with one battery, it generates 0.5W of radiated power output, operating at a high efficiency to allow the maximum number of transmissions from the battery. The high-power, high-efficiency characteristics of this transmitter maximize both the quantity and quality of received messages.

Location accuracy
Service Argos provides the locations with best accuracy as good as ±250m.

Analysis software
Wildlife Computers-designed PC-based WC-DAP software helps collect, prepare, and analyze the data returned from the tag through Argos. DAP can automatically collect Argos data from the Argos servers, decompress the messages into readable data, generate CSV files of the data, generate KML files of the track for Google Earth, and generate PXP files for visualization and further processing by Igor Pro (Wavemetrics).