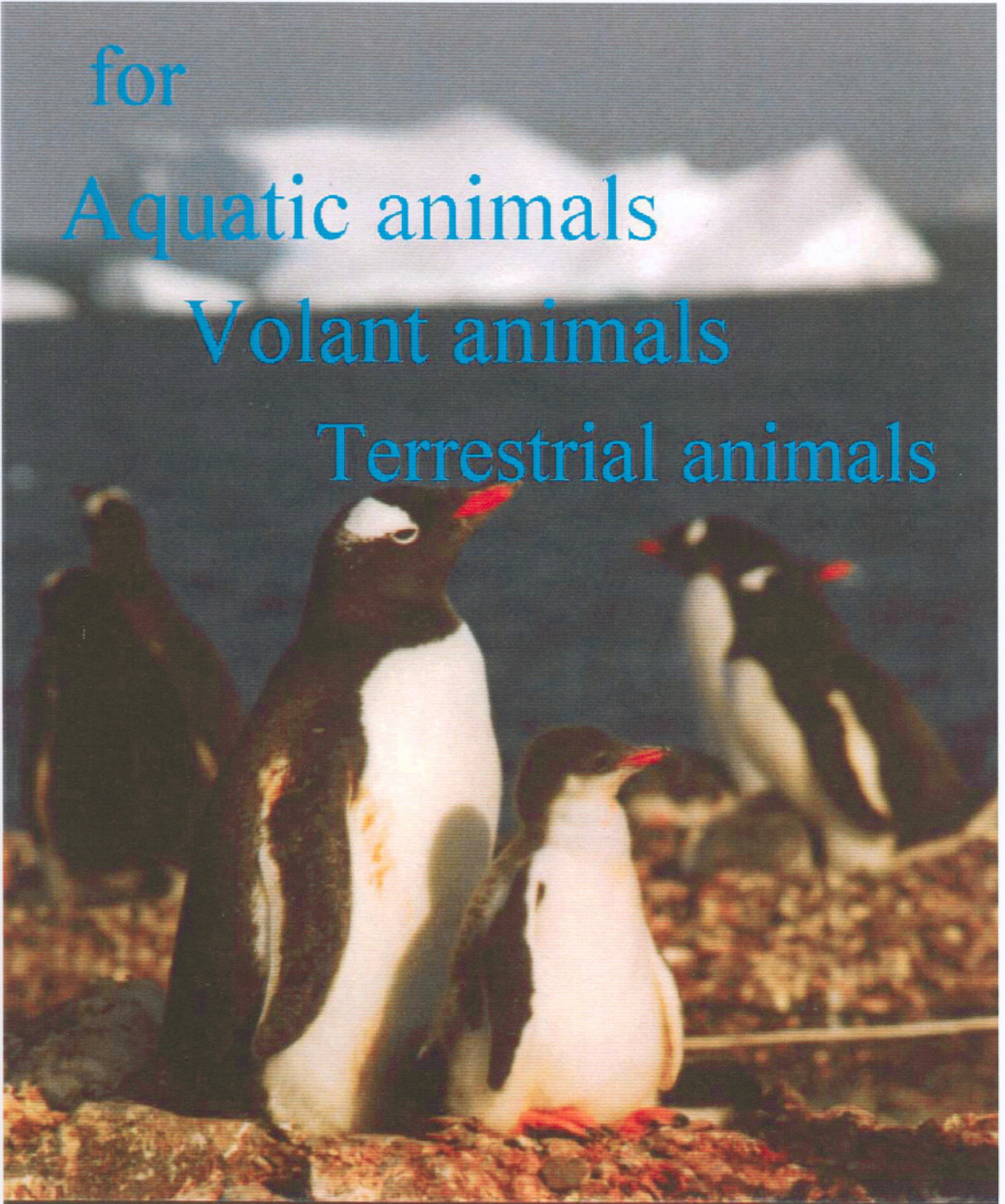# TRACKING RECORDER DK600 Series

for

**Aquatic animals**

**Volant animals**

**Terrestrial animals**

# TRACKING-RECORDERs DK600 Series

## *for*
### *- aquatic animals -*
### *- terrestrial animals -*
### *- birds -*

The **TRACKING-RECORDERs DK600** have been specially conceived for logging data from free-living animals.

In addition to the obvious demands of small size and weight the DK600-unit provides accurate and reliable readings.

The DK600 measures and stores several different parameters depending on the type of animal to be monitored, whether terrestrial, aquatic or volant.

Each sensor is calibrated individually and combined with a state-of-the-art temperature compensation.
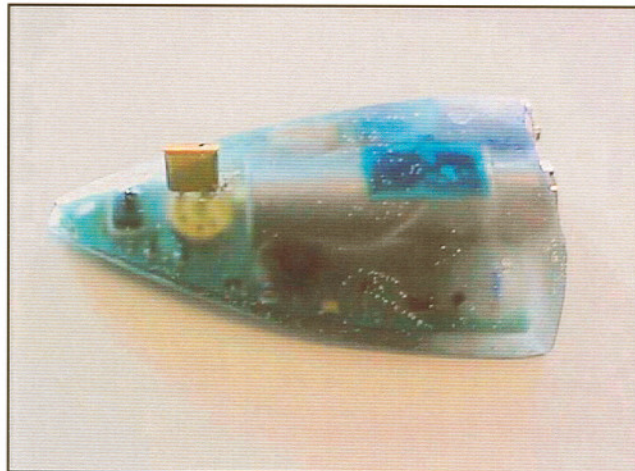
- User-selectable interval (2 s - 24 h)
- 2 Megabyte memory for 1million readings with 16 bit resolution
- No data loss if batteries fail
- GLS positioning system
- Delayed start- up to 24 hours from initiation
- Hydrodynamic shape
- Small dimensions



*TRACKING-REKORDER*

The **TRACKING-RECORDERs** are connected via the Interface I-16 to the RS 232 port of an IBM-compatible computer or notebook. Using the software DK200EA the user may **set the interval between two readings according to his application**. **A delayed start** may also be set to allow for delays in deployment.

Downloaded data may be converted into an ASCII-file for further analysis with common spreadsheet programs such as Excel® or Lotus®.

Optionally, an **analysis software** (MULTITRACE) is available to analyse directly geographic location, diving parameters etc.

The **TRACKING-RECORDERs** have a **2MB** memory to store up to **one million readings** with a resolution of up to **16 bit !**

Because of the **non-volatile memory** the collected readings will remain in the memory, even if the battery fails. You may then replace the battery, download the logger and set it up for the application.

The **housing** of the **TRACKING-RECORDER** is fully **waterproof** and **hydrodynamically- / aerodynamically- shaped** to ensure that the animals are as comfortable as possible.
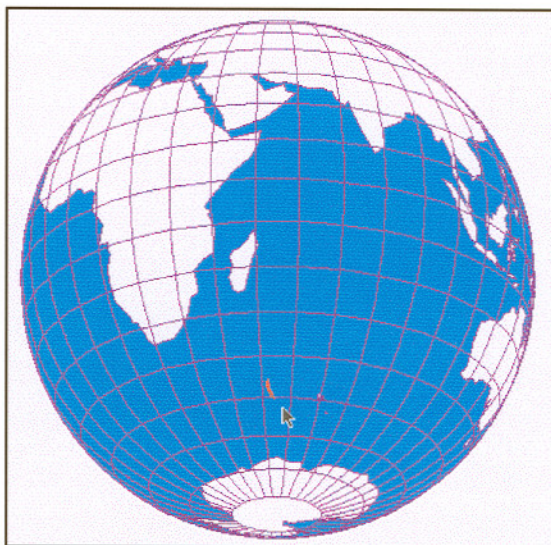
The **current consumption** is maintained **low** to allow **long logging periods**.

The logger has a very rugged design and has been used, for example, on **penguins, turtles, seals and albatrosses.**

# TRACKING RECORDER DK602 and DK603
## *for aquatic and volant animals*

The TRACKING RECORDERs DK602 and DK603 are very similar to each other. Measuring the same parameters they differ in shape and weight and have different ranges for depth / height and speed.
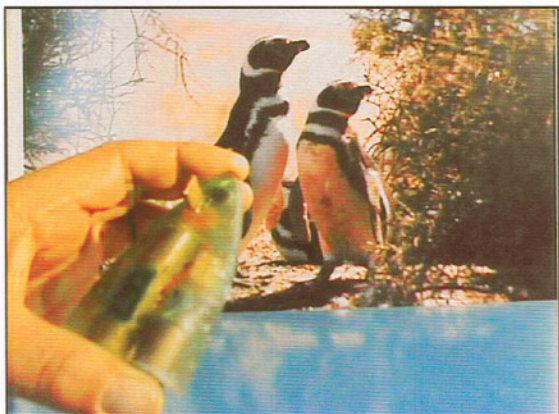




## Specifications DK602 (for sea animals)

### Dive depth
| | |
|---|---|
| Range: | 0....300 m |

(other ranges on request)

| | |
|---|---|
| Resolution: | 9 mm |
| Accuracy: | ± 0.1% of range |

### Speed
| | |
|---|---|
| Range: | 0...10 m/s (in water) |
| Resolution: | 0.01 m/s |
| Accuracy: | ± 0.15 m/s (depending on shape) |

### Temperature
| | |
|---|---|
| Range: | -20...+80°C (standard) |
| Resolution: | 0.01 °C |
| Accuracy: | ± 0.2 °C |

### Light (GLS)
Light is measured with a very stable semiconductor sensor.
| | |
|---|---|
| Range: | 0...120,000 lux. |
| Resolution: | 4 lux |

### Swim heading
The swim heading is measured with a 3-dimensional compass which gives information about the direction in which the animal is swimming.

### Max. Dimensions (LxWxH)
approx.100 x 56 x 21 mm, hydrodynamically shaped, (see photo)

### Weight:
approx 110g incl. housing and battery, weighs **only 35g in water.**

---

- Swim heading (3D) or flight heading (3D)
- Depth or height
- Speed
- Temperature
- Light

---

## Specifications DK603 (for volant animals)

### Flight height
| | |
|---|---|
| Range: | 0....3000 m (in air) |
| Resolution: | 100 mm |
| Accuracy: | ± 0.1% of range |

### Speed
| | |
|---|---|
| Range: | 0...40 m/s (in air) |
| Resolution: | 0.01 m/s |
| Accuracy: | ± 1 m/s |

(depending on shape of animal)

### Temperature
| | |
|---|---|
| Range: | -20...+80°C (standard) |
| Resolution: | 0.01 °C |
| Accuracy: | ± 0.2 °C |

### Light (GLS)
Light is measured with a very stable semiconductor sensor.
| | |
|---|---|
| Range: | 0...120,000 lux. |
| Resolution: | 4 lux |

### Flight heading
The sensor to monitor flight heading is the same 3-dimensional compass which is used for the sea animals.

### Max. Dimensions (LxWxH)
approx.100 x 56 x 21 mm, aerodynamically shaped, (see photo)

### Weight:
45g incl. housing and battery

---

The Analysis Software MULTITRACE (see next page) automatically calculates the route of the animal by means of time and light (geolocation) as well as depth, speed and direction (dead reckoning).

## TRACKING RECORDER DK604
### *for terrestrial animals*

The TRACKING RECORDER DK604 has been designed for monitoring the behaviour of terrestrial animals. The logger is fitted with 4 Sensors for:

> Travel heading or
>    Pitch, roll angle
> Temperature
> Light (GLS)
> Barometric pressure

## Specifications DK604 (A+B)

### Travel heading (model DK604A)
The travel heading is measured with a 3-dimensional compass.

### Pitch, roll angle (model DK604B)
Instead of the compass, an inclination sensor may be fitted. This sensor measures the pitch and roll of the animal.

### Temperature

| Range | Resolution | Accuracy |
|---|---|---|
| -20...+80°C | 0.01 °C | ± 0.2 °C |

### Light (GLS)
Light is measured with a very stable semi-conductor sensor.
Range:        0...120,000 lux.
Resolution:   4 lux

### Baromteric pressure
The barometric pressure sensor is used to monitor the climbing activity of the animals (in mountainous terrain). If a stationary barometer logger (for example P-LOG120-B) is fixed at ground level, you may afterwards subtract the reference readings from the readings of the TRACKING RECORDER.

| Range (air) | Resolution | Accuracy |
|---|---|---|
| 0...3000 m | 100 mm | ± 0.1 %FS |

### Max. Dimensions (LxWxH)
approx.100 x 56 x 21 mm

### Weight:
45g-110g incl. housing and battery
(depending on the animal to be monitored)

## MultiTrace Analysis Program

MULTITRACE is a DOS-based Analysis Program which allows you to rapidly graph complete data files of the TRACKING RECORDERS.
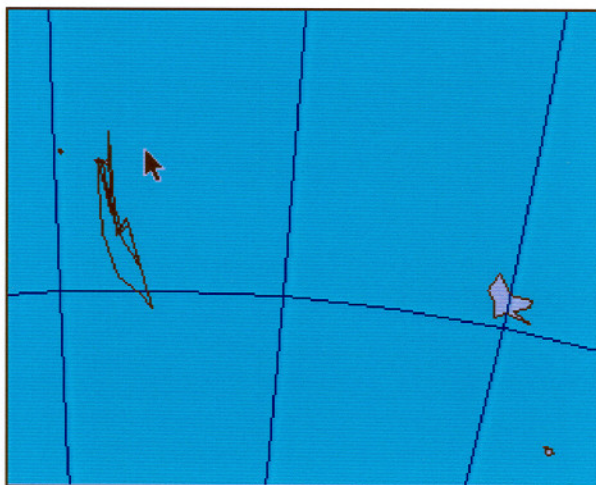
Each channel may be scaled according to your demands and the software allows you to zoom any areas of interest.
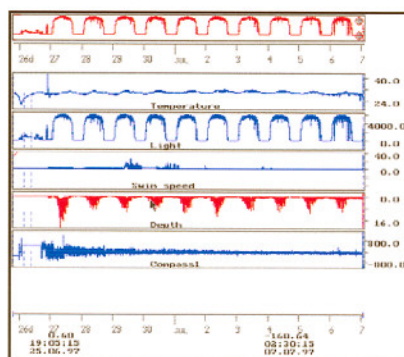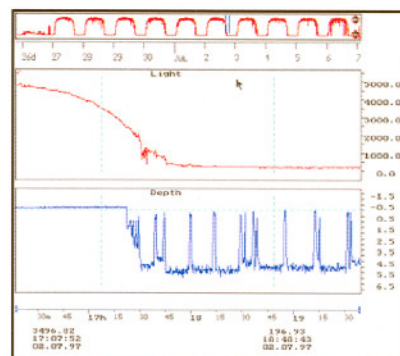


You can quickly and easily enable / disable channels, define their ranges, customise their descriptions and alter the time axis to include the required readings.



Furthermore, you may display a map of the world containing the route of the animal. Again you may zoom into areas of interest and change colours according to your demands.
 Zoomed area