

# Operating and installation instructions

## Acoustic-optical Wildlife warning *Day & Night*

### Table of contents

- 1 Product overview
- 2 Operation
- 3 Assembly
- 4 Positioning of the wild alarms in the terrain
- 5 Maintenance
- 6 Accessories
- 7 General explanations on the operation of the wild alarms
- 8 Safety instructions / warranty
- 9 Technical data

## 1 Product overview

### Acoustic-optical wild alarms are available in 2 versions

- with radio in black housing
- without radio in white housing

The illustration on the right shows the external, visible elements of the wild alarms of both types.

- 1 Solar cells
- 2 LEDs 2x blue sideways, 1x red diagonally upwards
- 3 Microphone / transducer (the microphone is protected by a net)
- 4 mounting holes

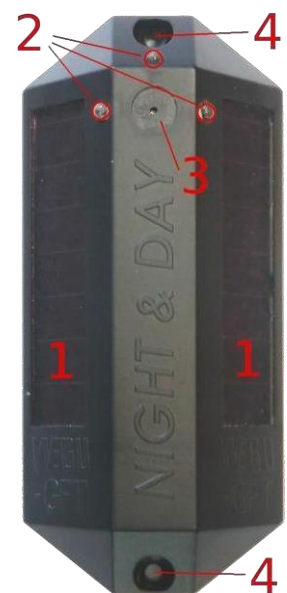
The unit is completely welded and sealed, internal components such as the storage capacitor and the radio module are therefore not visible.

### Alarm signals

Variable warning tone, LED flashes blue and red

### ***Difference between the Wildwarner Day & Night with radio and without radio***

The radio wildlife warning system perceives the car sounds (engine, tyres) through the integrated microphone and processes the sounds in a microcontroller. Subsequently, a radio module transmits a data signal to the surrounding warning devices within a radius of approx. 120 m, which in turn trigger the warning signals, two blue, one red LED flash and one warning tone.



The wildlife warning system with radio is most sensibly used in wooded areas, in unclear terrain, traffic routes with many curves and often for railway lines. The problem in curvy terrain is that the engine noise or the dipped headlights are detected too late. The radio wildlife detector offers the advantage that when the first wildlife detector triggers the warning sound, a radio signal is sent to the next wildlife detector at the same time and this also automatically triggers the warning signals before the wildlife detector perceives the sounds.

The wildlife warning devices without radio work identically, but do not pass on a radio signal, i.e. each wildwarning device without radio triggers its warning signal autonomously.

Both acoustic-optical wildlife alarms can be used in combination, depending on the terrain, and can also be supplemented with optical wildlife alarms.

## 2 Operation

If a wildlife detector is installed, the storage capacitor is charged via the solar cells. Depending on the light setting, the WildWarner is in operation by itself after about 8 hours.

Of course, the WildWarner can already be charged before installation, it is then immediately functional without further handling. The correct function of the alarm signals can be checked by a whistling sound.

## 3 Mounting

The installation of the Wildlife warning device is normally carried out on the existing guide posts, in each case on the side facing away from the road.

The installation must be carried out in the upper area of the delineator as shown in the *illustration in order* to avoid shading by grass. It is essential to note that the LEDs are located on the upper side of the housing.

Mounting is done with **two stainless steel screws 4.5 x 25mm**, which are screwed through the two mounting holes in the delineator.

On slopes, compensating wedges can be placed underneath to compensate for the inclination. For *more information*, see *Accessories*

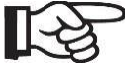


**The wildlife alarms must not be mounted with magnets, but exclusively with screws. Magnetism can restrict or destroy the device!**

*Note:* Wild animal warning types with radio should be positioned so that there are no obstacles (trees, concrete pillars, etc.) between two devices. This ensures that the radio signal is not interrupted.

---> see the following chapter 4 Installation / Positioning

## 4 Positioning of the wild alarms in the terrain



**The correct positioning of the off-road Wildlife detectors is crucial for the effectiveness of the accident protection.**  
**We have experience - let us give you expert advice!**

Based on the terrain conditions (forest, hills, arable land, settlement area, open terrain, etc.), course of the traffic routes and their condition, speed of the vehicles, type of wildlife, the positioning of the wildlife warning devices must be carefully planned.

**The following information can therefore only be general guidelines.**

The placement of several wildlife warning devices along the road is done alternately on the left and right side of the road with a maximum distance of 50 metres.

Additional wildlife warning devices can be mounted away from the road, e.g. on embankments on additional stakes as shown in the illustration.



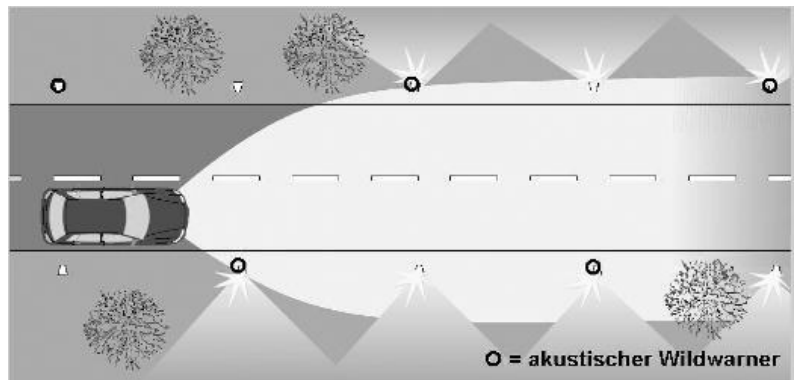
It is essential to observe an early warning time corresponding to the expected maximum speed.

Speed km/h	corresponds to path m/s	Recommended distance to the danger zone in m	corresponds to distance in sec.
60	16,67	66,67	4
70	19,44	77,78	4
80	22,22	88,89	4
90	25,00	100,00	4
100	27,78	111,11	4
120	33,33	133,33	4
130	36,11	144,44	4

### Notes on positioning

### Straight stretches

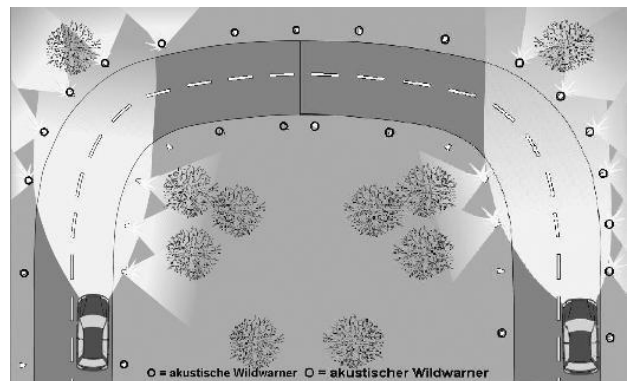
On a straight level roadway, the headlight is directed so that acoustic-optical wildlife warning devices are illuminated by the vehicle's headlight, thus triggering the sound and/or LED flashes. The mounting distances should be approx. 30 to 40 m alternately along the road. On long straight roads where the average speed of vehicles is higher, an appropriate early warning time should be taken into account.



The reaction time of Wildlife should generally be assumed to be 4 seconds. *see table above*

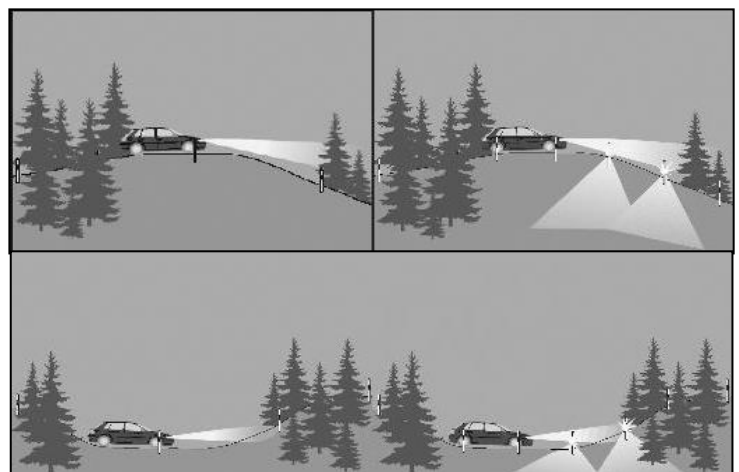
### Tracks with curves

In curves, the headlight cannot illuminate as long a distance as on a straight stretch of road. In order to make the best use of the light available in bends, the acoustic-optical wildlife warning devices must be mounted in the outside bend area between 30 to 40 m, on every available delineator.



### Routes on hilltops, embankments or in valley or road cuts

The light conditions of the car headlights are such that only part of the road can be illuminated by the headlights, also in the opposite direction to the flat road. Therefore, it is also necessary to install the acoustic-optical wildlife warning devices at a distance of 30 to 40 metres.



## 5 Maintenance

The unit does not contain any customer-replaceable components. Regular cleaning with clean water is recommended. Do not use high-pressure cleaners. If necessary, the solar cells can be wiped with a soft cloth. In winter, ice and snow deposits could impair the function. In this case, carefully remove ice and snow from the unit so that neither the solar cells nor the transducer are damaged.

## 6 Accessories

**Guard rail brackets** made of PVC (for wild animal warning system with radio)  
or metal (for wild animal warning without radio)



## 7 General explanations on the operation of the wildlife alarms

### Operating modes of the wild alarms

#### Night mode

To minimise energy consumption, the detection of vehicles via noise is switched off at night.

#### Daytime mode

During the day (when the ambient brightness is high), on the other hand, the detection of vehicles via changes in brightness at the solar cell is switched off, as it can be assumed that passing vehicles do not cause any significant change in brightness even when the headlights are switched on, but that cloud/sun transitions and moving shadows would cause false triggering. The warning signals are triggered by the detection of engine and tyre noises by the microphone.

### **Twilight mode**

During twilight, both detection mechanisms are active to ensure the highest possible vehicle detection rate.

### **Energy-saving mode**

If there is too little energy available for proper operation, all functions are switched off in order to be able to resume normal operation as quickly as possible the next day when there is sufficient brightness.

### **Functionality of the wild warning system**

If a vehicle is detected, a warning is given to the animal in the form of flashing signals with blue LEDs to the side of the road and a variable whistle sound. This prevents Wildlife from running onto the roadway immediately before approaching vehicles. An additional red LED shining diagonally upwards warns low-flying flying Wildlife and causes it to rise higher, thus also preventing the probability of a collision with mostly high vehicles such as trucks.

After a warning has been given, there is a blocking time (approx. 20 sec interval) until the next triggering, during which no further detection of vehicles takes place or, in the case of warners with radio, the event is not forwarded. The Wildlife remains stationary for approx. 30 seconds anyway and should not be startled again by repeated alarm signals.

### **Special advantages of the wild animal warning system with radio**

To ensure that the warning is given with sufficient lead time before the vehicle, a vehicle detected by a wildlife detector is transmitted via radio to other wildlife detectors in the reception area. In addition, this forwarding of detected vehicles makes it possible to set up additional wildlife detectors in places where these approaching vehicles cannot be detected themselves, e.g. on embankments. This holds back the Wildlife already before the edge of the embankment and effectively prevents the Wildlife from running into the embankment and crossing the road despite the warning.

Problem areas are mostly the embankments and road cuts, as well as daytime accidents.

Between the embankments ("tunnels"), the vehicles make such a high noise that the animals perceive the warning noise too late. When the Wildlife is already on the edges of the embankment, it is too late. They cross the road and accidents happen again and again. If, however, the animals are warned early enough on these road sections, approx. 50-100 m before they enter this problem area, this moment of danger is also taken into account and accident protection is optimised.

### **Conclusion**

- The acoustic-optical wildlife alarms can be installed both along the road and in thickets or on embankments where wildlife crossings are more frequent.
- The acoustic-optical wildlife alarms are able to prevent daytime accidents. Noises from electric cars, which only have tyre noises, are also detected.
- The acoustic-optical wild animal alarms with radio are particularly suitable for rail traffic, especially on lines with high-speed trains that reach speeds of up to 250 km/h. For this application, we can supply a special circuit with a higher radio range. For this application, we can supply a special circuit with a higher radio range.

## 8 Safety instructions / warranty



In the event of damage caused by non-observance of these operating instructions, the warranty / guarantee shall become null and void. We accept no liability for consequential damage.

We accept no liability for damage to property or personal injury caused by improper handling or failure to observe the safety instructions. In such cases, the warranty / guarantee becomes void.

The unit does not contain any parts that can be replaced or exchanged by the customer. Modifications or conversions of the product will therefore void the warranty / guarantee and are prohibited for safety reasons. The product can be damaged by improper use, for example by hitting the solar cell or cleaning with a high-pressure cleaner. In this case, the warranty / guarantee also expires.

## 9 Technical data

### **Acoustic-optical Wildlife warner *Day&Night* with radio**

Housing colour	black
Operating temperature	-30°C to +70°C
Power generation	Solar cells
Energy storage	Capacitor
Loading time	1 hour in sunshine
Vehicle detection day	Engine / Tyres / Vehicle Noise
Vehicle detection night	Spotlight
Audio frequency	approx. 4 kHz modulated
Sound level	82 dB/10cm
Radio	Transmission frequency 433.92 MHz, maximum transmission power 10
Optical warning	2x blue LED, 1x red LED
Trigger interval	20 seconds
Switch-on frequency	approx. 6'300 insertions / approx. 2 days at max. frequency
Function time	Day and night / 24 hours
Dimensions	170 x 80 x 37mm
Weight	320g
Warranty	24 months / except theft and improper handling

### **Acoustic-optical wild alarm *Day&Night* without radio**

Housing colour	white
Operating temperature	-30°C to +70°C
Power generation	Solar cells
Energy storage	Capacitor
Loading time	1 hour in sunshine
Vehicle detection day	Engine / Tyres / Vehicle Noise
Vehicle detection night	Spotlight
Audio frequency	approx. 4 kHz modulated
Sound level	82 dB/10cm
Optical warning	2x blue LED, 1x red LED
Trigger interval	20 seconds
Function time	Day and night / 24 hours
Dimensions	170 x 80 x 37mm
Weight	300g
Warranty	24 months / except theft and improper handling
Switch-on frequency	approx. 9'800 insertions / approx. 3 days at max. frequency

AL amended September 2022