

# Ultra MAGIC

Powertec



Power line detector  
user manual

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The Powertec detects the invisible electric field surrounding all energised electricity cables and has a series of LED warning lights that are scaled according to the amount of signal received.

The Powertec Power Line warning device has been designed and built to the highest standards.



# contents

## 1 x Powertec Warning Device

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PLWD 01



## 1 x Carrying/Storage Case

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PLWD 05



## 1 x Antenna Cable

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PLWD 02



## 1 x Lanyard

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PLWD 06



## 1 x Velcro strap

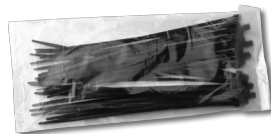
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PLWD 03



## 18 x Cable Tie

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## 1 x Antenna storage pouch (for basket) 4 x AA Batteries

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PLWD 04



### Marking Explanations:

 **Warning triangle – refer to manual**

 **Wheelie bin – this instrument should be recycled as electronic waste**

 **CE mark – conformity to latest European standards**

**IP54 – Poweretc is rated as IP54 against water splashes and dust ingress.**

### Caution


 **Warning**

### Safety

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Before using the Powertec or accessories read this instruction manual carefully to ensure a safe understanding of the symbols and use of this instrument.

See above for a list of symbols used on the product and in this manual.

A Warning () identifies hazardous conditions and actions that could cause bodily harm or death.

A **Caution** identifies conditions and actions that could damage the instrument.

# setup: batteries and antenna

## Installing the batteries

Always use good quality LR6 AA Alkaline Batteries. Remove the Powertec from the box and carefully unscrew the back of the housing with a cross head screwdriver. Insert the 4 x AA batteries and replace the back cover, observe the correct polarity marked in the housing.

## Installing the Antenna

The antenna for the Powertec consists of one cable 1 metre long with a silver connector which connects to the base of the instrument. It then joins to two cables 6 metres long.

### Warning

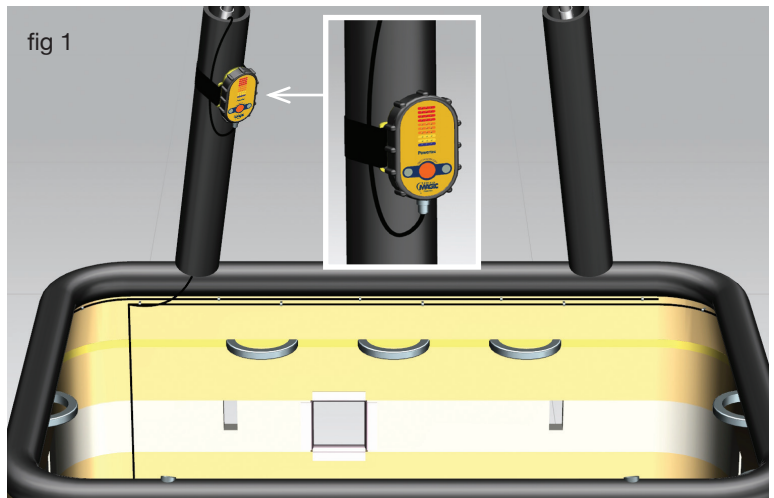
The antenna has been calibrated to this length for the correct functioning of the instrument. Under no circumstances cut the antenna cable shorter.

The Antenna cable is intended to be installed in the basket permanently. Should you wish to use the Powertec in multiple baskets we recommend the purchase of additional antennas. (Part No.PLWD 02)

Before installation of the antenna ensure the basket is empty of cylinders and straps.

Starting where the antenna splits into two, affix one of the 6 metre antenna cables around the top inside rim of the basket underneath the padding using the cable ties provided (fig 1).

Commence in the corner of the basket with the burner support where you intend to have the Powertec positioned during flight.

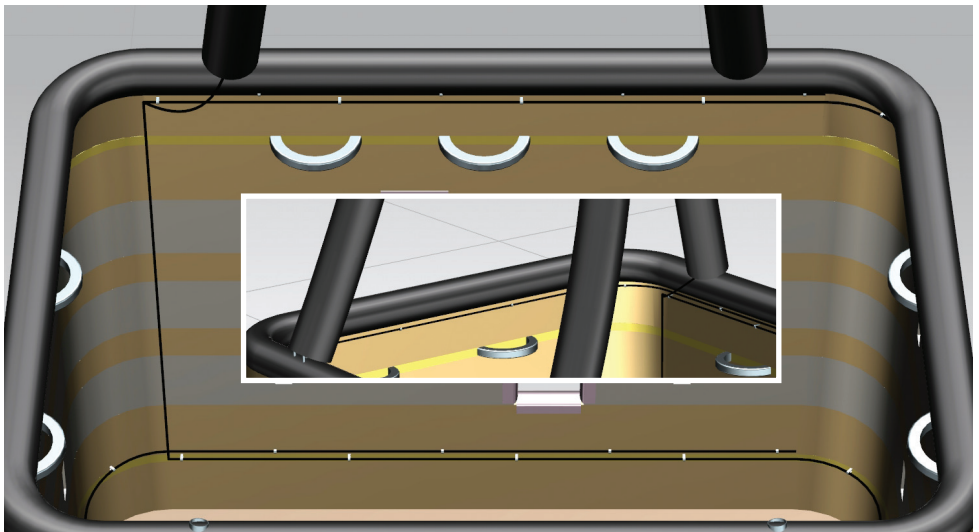
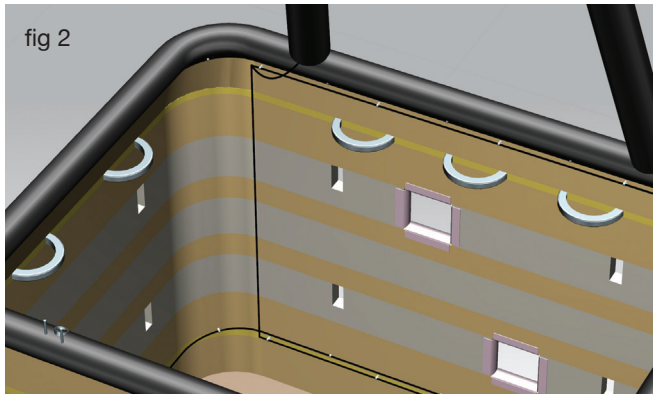


**⚠** If the antenna is too long for the basket, overlap the antenna cable. Do not cut the antenna cable. At this stage do not tighten the cable ties fully. Adjust the antenna cable until it is even and straight. Once in place tighten the cable ties. Carefully trim the cable ties removing any sharp edges from the cable tie.

Fix the second 6 metre cable vertically down the inside corner of the basket and route around the inside edge 15 - 20cm from the floor (fig 2) repeating the process as described for the upper cable.

The antenna cable can be left permanently installed in the basket as described.

Install the pouch under the top rim of the basket in a position where it does not interfere with flight cylinder installation. The pouch is for storing the single part of the antenna cable when not in use. This completes the installation of the Powertec antenna in the basket.



# installing the Powertec

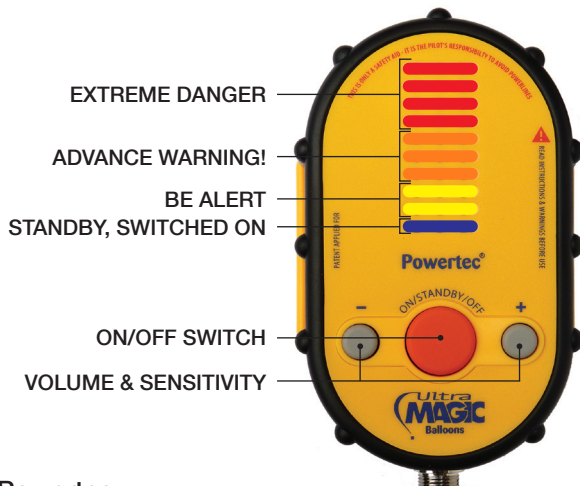
## Installing the Powertec instrument



With the burner assembled place the 1.5 metre cable inside the pole cover with the silver connector outside.

Install the Powertec onto the outside of the burner support pole cover at the preferred height with the Velcro strap and lanyard provided.

To complete the installation plug the antenna cable into the Powertec base, ensuring that it is firmly engaged.



## Familiarising yourself with the Powertec

Switch on the Powertec by pressing the large centre button for 2 seconds. A row of blue LED's will illuminate to indicate the powertec is on and ready for use.

The unit comes pre-set and ready to use.

### **Warnings** – please read and understand

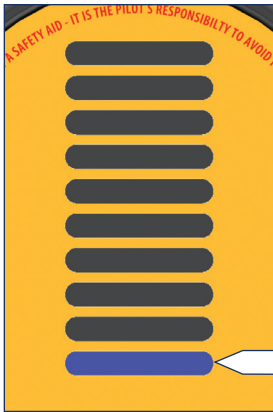
Flying near to power lines is extremely dangerous and can be fatal if struck. Even with low voltage power lines a short circuit caused by a line strike can generate many thousands of amps of fault current and can easily electrocute the occupants of the balloon.

Powertec is a pilot aid only, designed as an advance warning of danger. It does not replace the senses and skill of a pilot. Powertec can help identify hazards in advance



# Powertec warning indicators

## Powertec indicators



Row 1

**BLUE**

No audible alert

**Standby and switched on**

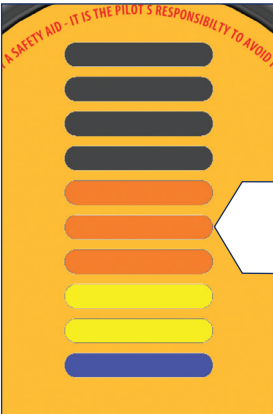


Rows 2 & 3

**AMBER**

No audible alert

**Advance warning of signal - be alert**

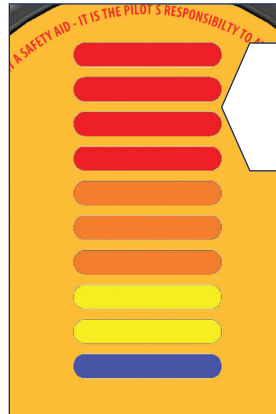


Rows 4 - 6

**RED**

 Single beep

**Danger - be alert - power lines in the vicinity**



Rows 7 - 10

**RED**

 Continuous warning

**Extreme danger - power lines very close**

of a visual sighting particularly in direct low level sunlight or against dark backgrounds. Even when Powertec has identified a hazard you must pay particular attention, there could be more Powerlines on your direct flight path.

Powertec will not detect non-energised powerlines.

Ultramagic SA or any of its agents accept no liability for power line strikes whilst using the Powertec instrument.

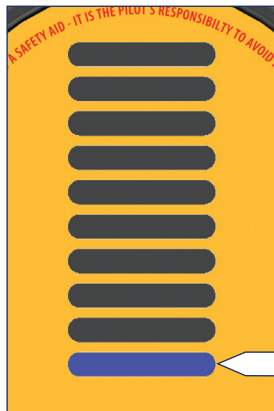
# using the Powertec

We recommend keeping the Powertec switched on for the duration of the flight.

We suggest it becomes part of your personal pre-flight checks to switch it on before taking off.

**Note:** If your take off location is within close proximity to powerlines the Powertec will make an immediate indication.

## Powertec indicators



Row 1

**BLUE**

No audible alert

**Standby and switched on**

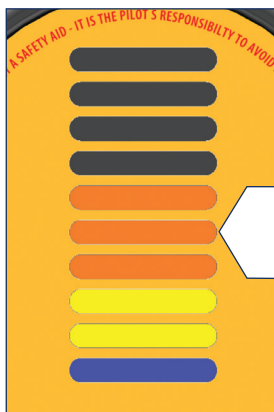


Rows 2 & 3

**AMBER**

No audible alert

**Advance warning of signal - be alert**

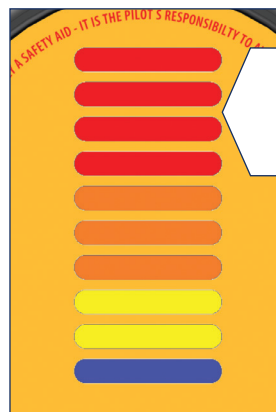


Rows 4 - 6

**RED**

 Single beep

**Danger - be alert - power lines in the vicinity**



Rows 7 - 10

**RED**

 Continuous warning

**Extreme danger - power lines very close**

## Volume

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The volume of the audible warning tones can be adjusted using the + or – either side of the main switch. Once set it will stay at this level even when switched off and on again.

## Sensitivity

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The Powertec comes pre-set on a medium sensitivity.

As electric fields are greater around the largest high tensions power lines then the distance of warning will be increased.

The sensitivity of powertec can be adjusted to suit local conditions and your preference.

Should you wish to adjust the sensitivity first switch the unit on.

Hold both volume buttons simultaneously for 5 seconds until one row of Amber or Red LED's lights up in addition to the Blue LED's. You can then press the volume buttons + or – to adjust the sensitivity up or down. The + button increases the sensitivity and the – button decreases the sensitivity.

The highest level of sensitivity is the top row of Red LED's and the lowest is the bottom row of amber LED's above the blue LED's.

Once you have set the sensitivity to the preferred level press the main centre switch to return the unit back to detecting mode.

### **Warning**

**You must NOT fly near to power lines to test the Powertec Power line detector, this is extremely dangerous**

**Experience gained when passing within the vicinity of power lines will indicate how sensitive the Powertec is.**



Batteries are made from important resources and chemicals, including lead, cadmium, zinc, lithium and mercury. If batteries are disposed of as normal waste, they'll be taken to a landfill site and those resources will be lost and will contribute to the pollution of the environment. Recycling is one way you can help the environment and you should dispose of used batteries separately from other waste, using local collection and recycling schemes available.

The batteries should be removed from the Powertec if the unit is to be stored for more than three months.

To clean the Powertec use a damp cloth. Do not use any solvents. Do not allow any water ingress and ensure Powertec is fully dry before use.

If the equipment is used in a manner not specified by the manufacturer, the indication given by the equipment may be impaired.

Disconnect from the antenna before removing battery cover.

Inspect the Powertec and accessories for damage before use and do not use if damage is found.

Do not use the antenna if it is damaged. Examine the antenna for damaged insulation, exposed metal, or breaks.

If damaged a replacement antenna is required.

Use only approved Ultramagic accessories such as antenna etc. supplied with the instrument. Part numbers of replacement parts are on page 4.

Do not use the product if it is damaged.

There are no user serviceable parts inside Powertec. Opening the unit other than the battery cover will invalidate the warranty. To be repaired by Ultramagic authorised agents only.

Use the carrying/storage pouch provided when transporting the Powertec.

If you have any questions or need help installing or using the Powertec please contact us: [admim@ultramagic.com](mailto:admim@ultramagic.com)

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