PowerBox Systems®

World Leaders in RC Power Supply Systems

Instruction Manual

MagSensor


PowerBox Systems®

Dear customer,

We are delighted that you have decided to purchase our “magnetic” On / Off switch.
The **MagSensor** represents an alternative method of operating and switching our **PowerBox** battery backers. The circuit is based on modern, extremely sensitive, zero-contact “Hall sensors”, which respond to a defined magnetic field by activating the electronic switches in the **PowerBox**. The Hall sensors do not switch the cur-rent, but simply pass on the switching signal.

Description:

This accessory is suitable for all **PowerBox systems**, regardless of age, which are designed to be switched on and off using the **SensorSwitch**. The basic purpose of the **MagSensor** is to switch the dual power circuits on and off, but it can also be used to reset the capacity display fitted to more recent systems, if this is an integral feature of the **PowerBox**. The **SensorSwitch** must still be used for programming servos and carrying out set-up tasks within the **PowerBox**’s programming menu. The particular advantage of the **MagSensor** is that scale pilots can exploit all the advantages of our redundant battery backer systems, but without an exposed On / Off switch.
The magnetic trigger is powerful enough to penetrate reliably through thick GRP / CFRP walls panels, even if they are several millimetres thick.
In addition to a pair of green LEDs for visual monitoring, the MagSensor features a supplementary Piezo sounder, which confirms the On / Off switching process by means of beeps of different pitch.
The ribbon cable is the same standard length as that of the **SensorSwitch**.

1. Connecting and mounting the MagSensor

The **MagSensor** is simply plugged into the **PowerBox** instead of the **SensorSwitch**: remove the SensorSwitch, and connect the **MagSensor** to the red socket on your **PowerBox** battery backer in its place. The **MagSensor** is ready for use immediately.

The **MagSensor** is designed to be mounted in your model in either of two ways:

a) Fully concealed installation

The **MagSensor** is designed in such a way that the two Hall sensors for both power circuits can be “addressed” from the front or back of the **MagSensor**.
If you do not need to see the LED indicators, then there is no necessity to drill holes for the LEDs in the fuselage side. The **MagSensor** can also be installed at your selected location by the back surface: this is accomplished by using the strip of double-sided adhesive tape supplied in the set, and simply sticking the unit in place at the selected location.
The set includes film stickers which can be used as a visual aid, to help you locate the “power-on points” from the outside of the model.

b) Monitor LEDs visible from outside

In addition to the audible confirmation signal, the monitor LEDs provide a visual indication of the power-on state. This is very practical, as it enables you reliably to confirm the system’s power-on status even in noisy surroundings. The set is supplied complete with film stickers (simulated screw fixings in various colours) which enable you to identify the hole spacing accurately. The **MagSensor** is mounted simply by sticking it to the inside of the fuselage side using the double-sided adhesive tape supplied in the set.

2. Operating the MagSensor

a) Switching on and off

The **MagSensor** still requires you to activate both power circuits individually - as with all **PowerBox** systems. The reason behind this feature is that the **PowerBox** contains two redundant switching and regulatory systems. Separate control also gives you the opportunity to check each of the **PowerBox**'s power circuits individually - and this also applies to the **MagSensor**.
To switch the **PowerBox** off completely, you must operate both Hall sensors using the magnetic trigger, and you should check that both LEDs confirm this. You must also ensure that you have switched off both power circuits when you switch the system off.
Hold the ring magnet over one LED in such a way that the LED can be seen on the inside. When the power circuit is switched on, the LED glows green, and at the same time a brief audible signal is emitted. Repeat the procedure with the second LED.

The audible signal which accompanies the power-on procedure differs in pitch from the power-off signal. This makes it possible to differentiate between the processes of switching off and switching on even in the case of a completely concealed installation.

Note:

every time you switch on or off, a time lock is activated in the **MagSensor**. This prevents the switch being triggered a second time if you accidentally fail to remove the magnet immediately. If you switch on and then wish to switch off again immediately, you must wait about ten seconds before the unit allows the power-off process.

b) Resetting the capacity counter

In the case of recent systems, such as the **PowerBox BaseLog**, **Competition** and **Cockpit**, and also the **SRS types**, the magnet trigger can also be used to erase the capacity counter. This is accomplished by repeatedly moving the ring magnet to and fro between the two LEDs or switching points, as if you were trying to wipe something off. After five contacts have been made, you will hear an audible signal, and the backer's integral screen displays the Reset message.

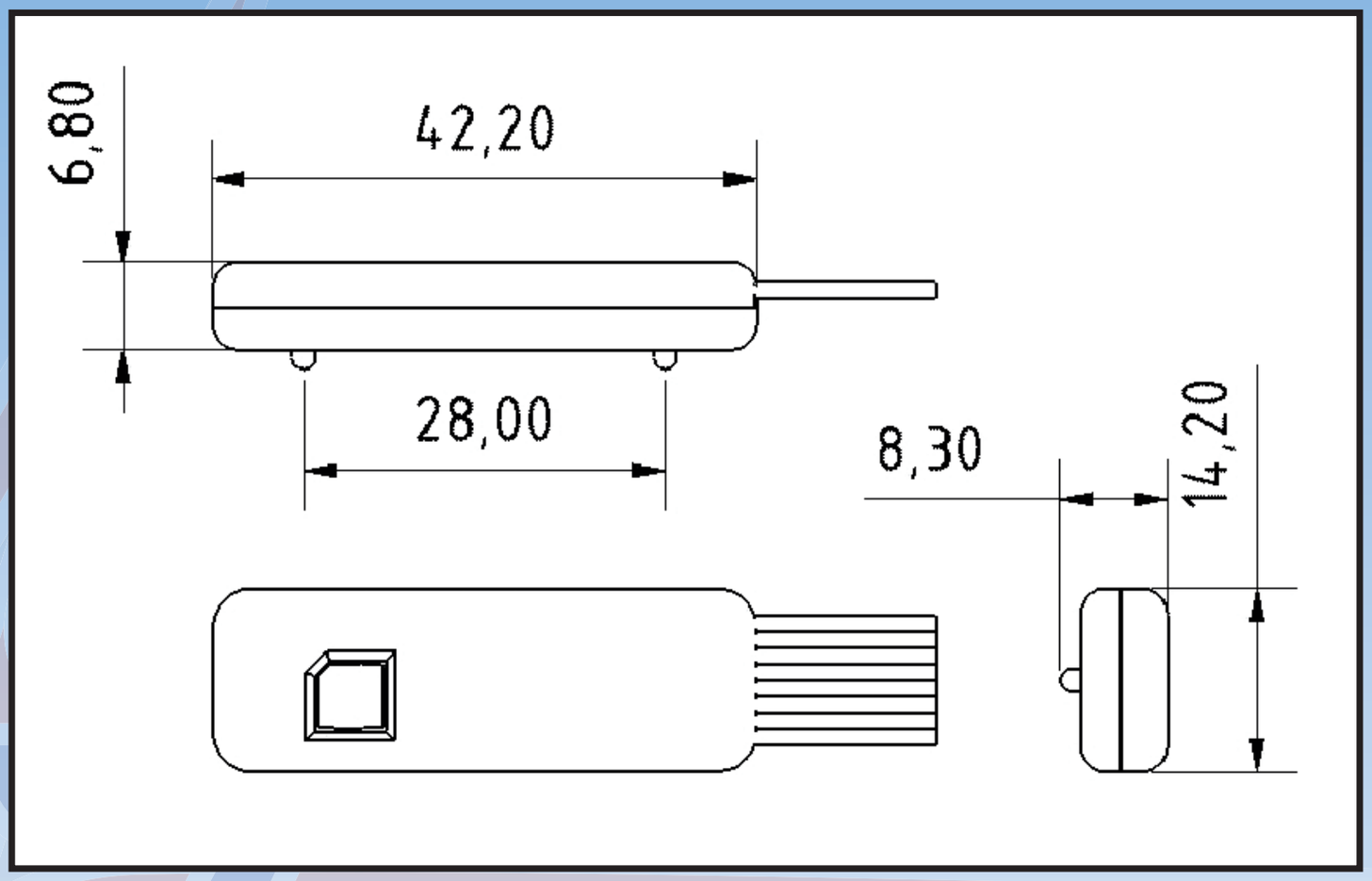
3. Specification

Energy source:	From the connected PowerBox
Current drain:	Power-on state approx. 10mA
	Power-off state approx. 20µA
Temperature range:	-30°C to +75 C
Weight:	10 g
EMV approval:	EN 55014-1:2006
CE approval:	2004/108/EG
WEEE Reg. No.	DE 639 766 11

The MagSensor satisfies the EMV protective requirements, EN 55014-1:2006, with certificate dated 10 February 2009. EMC approval 2004/108/EG.

Caution:
The magnet trigger contains a powerful permanent magnet. Keep well away from heart pacemakers and magnetic data media such as EC and credit cards, etc.

4. Dimensions:



5. Set contents

- **MagSensor** with 40 cm connecting lead
- Magnet trigger containing ring magnet
- Double-sided adhesive tape
- Key-ring
- Blue key fob
- Operating instructions in German and English

6. Guarantee conditions

We take the maintenance of the highest quality standards very seriously, and that is why **PowerBox Systems GmbH** is currently the only RC electronics manufacturer which has been awarded certification to the **DIN ISO 9001:2008** industrial norm.
Our stringent quality management, which applies both to development and pro-duction, is the reason why we are able to grant a **36 month** guarantee on our products, valid from the initial date of purchase. The guarantee covers proven material faults, which will be corrected by us at no charge to you.
Any repairs carried out do not extend the original guarantee period. The guarantee does not cover damage due to incorrect usage or operation, e.g. reversed polarity, excessive voltage or damp. The same applies to defects caused by severe wear or excessive vibration. We will not entertain any claims which fall outside these restric-tions, e.g. for consequent damages.

Service Address:

PowerBox-Systems GmbH
Ludwig-Auer-Str. 5

D-86609 Donauwörth
Germany

7. Liability exclusion:

We are not in a position to ensure that you install and operate the **MagSensor** cor-rectly, nor that the entire radio control system has been maintained properly.

Unless otherwise prescribed by binding law, our obligation to pay compensation, regardless of the legal argument employed, is limited to the invoice amount for the products of our manufacture which were actually involved in the event.

For this reason we are unable to accept liability for loss, damages or costs which result from the use of the device, or are connected with its use in any way.

We wish you every success using your new **MagSensor** from the **PowerBox Systems** stable, and hope you have much success and pleasure with it!

Donauwörth, September 2011

PowerBox-Systems GmbH

Certificated according to DIN EN ISO 9001:2008

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