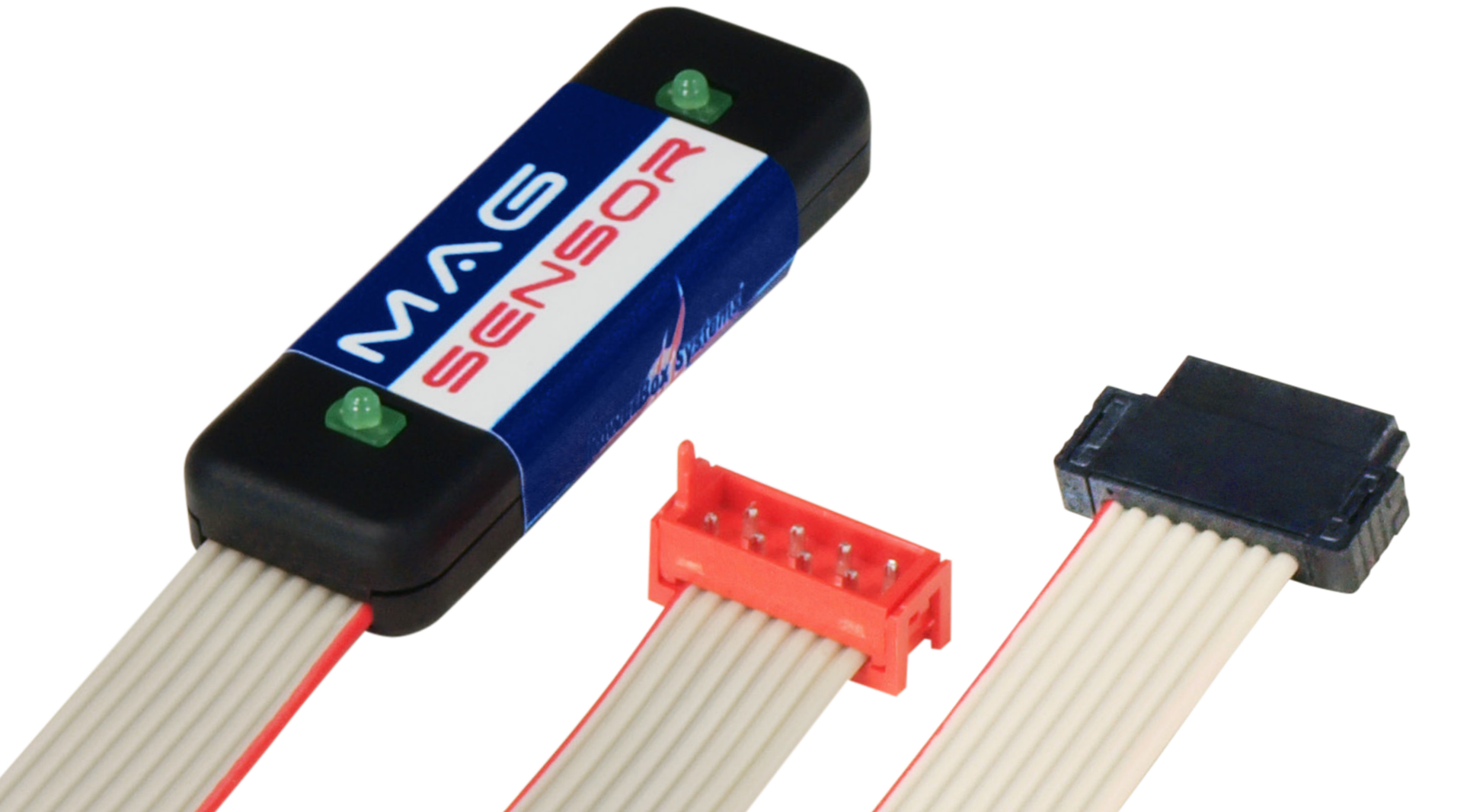
PowerBox Systems®

World Leaders in RC
Power Supply Systems

Instruction Manual

MagSensor



Dear customer,

We are delighted that you have decided to purchase our **MagSensor**. The **MagSensor** can be used with any **PowerBox** system which is normally operated using the button switch (three buttons); the unit switches the system on and off magnetically. If the **PowerBox** features an integral capacity counter, the **MagSensor** can also be used to reset the counter.
The switch operates using a no-contact process based on Hall sensors, which respond to a defined magnetic field, and a micro-controller which emulates the conventional switching process, as used by the button switch.
This process activates and de-activates the electronic switches in the backer.
The magnet supplied in the set is easily capable of penetrating wood several millimetres thick, or fuselage sides made of GRP or CFRP, making it possible to install the **MagSensor** in a concealed position inside the fuselage.
The **MagSensor** features a piezo buzzer, which emits different sounds to provide an audible indication of the power-on and power-off processes, in addition to a visual check using the two LEDs.

1. CONNECTING AND INSTALLING THE MAGSENSOR

The **MagSensor** is plugged into the **PowerBox** instead of the **SensorSwitch**. The **MagSensor** is available with a red plug (#9040) to suit all earlier systems, or a black plug (#9045) for more recent systems.

The **MagSensor** can be installed in either of two ways. In both cases the **MagSensor** is attached to the inside of the fuselage side using the self-adhesive tape supplied. The set includes stickers simulating a fueltank cap; these are designed

to be applied to the outside of the fuselage to help you locate the position of the Hall sensors from the outside.

a) Installation with the LEDs exposed
This option requires two 2mm Ø holes to be drilled in the fuselage side. The advantage is that the green LEDs give you a visual check of the **MagSensor** in addition to the unit's audible feedback.

b) Installation with the LEDs concealed
If you wish to install the **MagSensor** in a completely concealed location, this presents no problems. The switch operates reliably, and the unit's switched status is self-evident from the operation of the receiving system. Audible confirmation is also provided by the unit's integral piezo buzzer.

2. OPERATING THE MAGSENSOR

a) Switching on and off
The current Version 2 features a fundamental revision of the power-on and power-off processes. In the previous version both electronic switches were turned on and off independently of each other, whereas in Version 2 both switches are operated simultaneously by a single pass of the magnet.
The **PowerBox** is switched on or off by holding the magnet in front of one of the Hall sensors (close to the LEDs) for about three seconds.
When you switch on, the unit emits a rising audible signal, followed by two brief confirming beeps.

When you switch off, the unit emits a falling audible signal, also followed by two brief confirming beeps.
Since both circuits are switched together, you can be certain that both batteries are reliably switched on or off even when the unit is concealed, i.e. without being able to see the two LEDs.
The **MagSensor** includes a further security feature which alerts you if one battery is not plugged in: in this case the unit switches on, but then immediately activates the power-off process.
The PowerBox is not activated!

> **Note:** Every time a power-on or power-off process is carried out, the **MagSensor** activates a 10-second time lock. This prevents the switch being turned off again immediately if you should inadvertently fail to remove the magnet immediately.

b) Resetting the capacity counter
If you are using a system such as the **PowerBox Mercury SR2**, **Competition SR2** or **Royal SR2**, or an earlier system with capacity counter, then the magnet sensor can be used to reset the counter.
This is accomplished by repeatedly and briskly moving the ring magnet between the two LEDs, as if you were trying to wipe something off. After five successful contacts you will hear five audible signals, and the backer's screen will display a Reset message.

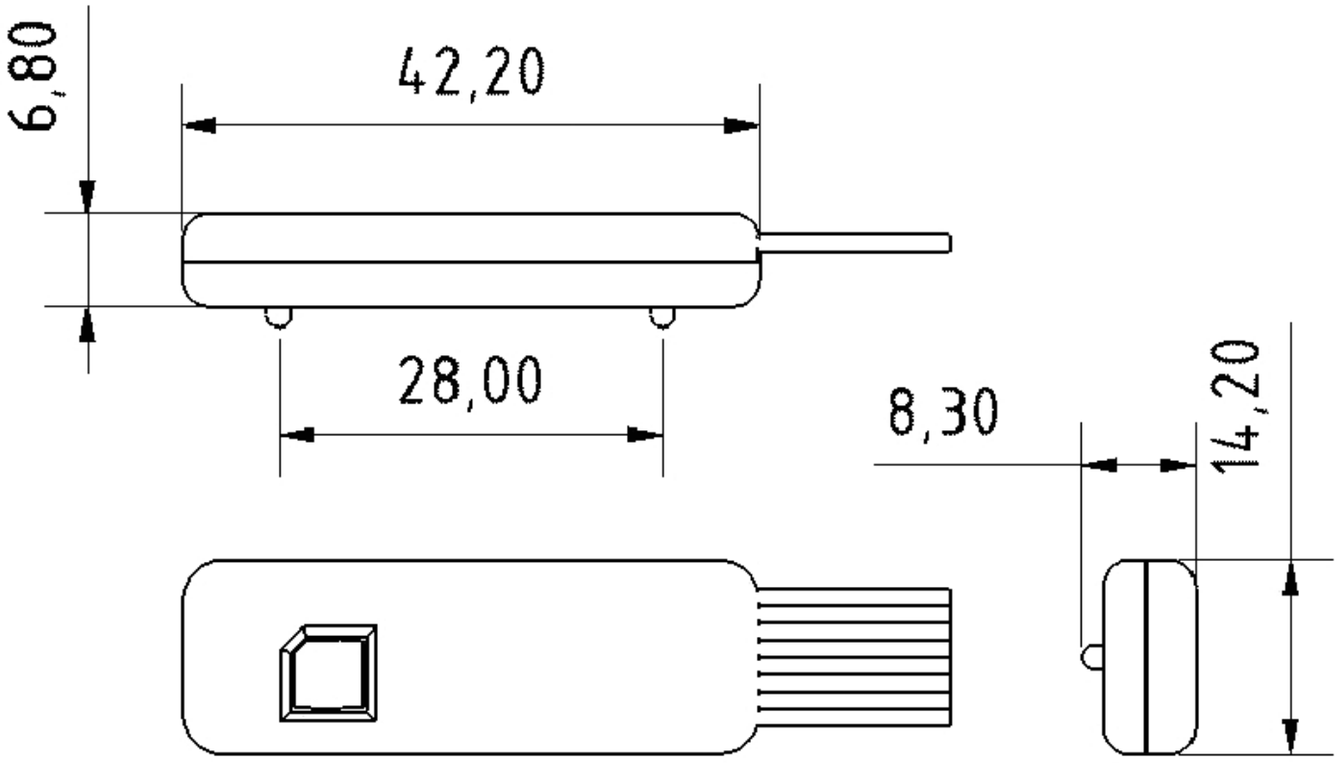
3. SPECIFICATION

Power supply: from the **PowerBox** connected to it
Current drain in the switched-on state: approx. 10 mA
Current drain in the switched-off state: approx. 100 µA
Temperature range: -30°C to +75°C
Weight: 10 g
EMV certification: EN 55014-1 :2006
CE certification: 2004/108/EG
WEEE Reg. No.: DE 639 766 11

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

Cautlon: The magnet sensor contains a powerful permanent magnet. Keep away from heart pacemakers and magnetic data memory devices such as EC, credit cards etc.credit cards, etc.

4. DIMENSIONS



5. SET CONTENTS

- **MagSensor** with 40 cm connecting lead
- Magnet sensor with ring magnet
- Double-sided adhesive tape
- Keyring
- Key fob
- Operating instructions in German and English

6. SERVICE NOTE

We make every effort to provide a good service to our customers, and have now established a Support Forum which covers all queries relating to our products. This helps us considerably, as we no longer have to answer frequently asked questions again and again. At the same time it gives you the opportunity to obtain assistance all round the clock, and even at weekends. The answers come from the **PowerBox team**, which guarantees that the answers are correct.

Please use the Support Forum **before** you contact us by telephone.

You will find the forum at the following address:

www.forum.powerbox-systems.com

7. GUARANTEE CONDITIONS

At **PowerBox-Systems** we insist on the highest possible quality standards in the development and manufacture of our products. They are guaranteed **“Made in Germany”**!

That is why we are able to grant a **24 month guarantee** on our **MagSensor** from the initial date of purchase. The guarantee covers proven material faults, which will be corrected by us at no charge to you. As a precautionary measure, we are obliged to point out that we reserve the right to replace the unit if we deem the repair to be economically unviable.

Repairs which our Service department carries out for you do not extend the original guarantee period.

The guarantee does not cover damage caused by incorrect usage, e.g. reverse polarity, excessive vibration, excessive voltage, damp, fuel, and short-circuits. The same applies to defects due to severe wear.

We accept no liability for transit damage or loss of your shipment.
If you wish to make a claim under guarantee, please send the device to the following address, together with proof of purchase and a description of the defect:

SERVICE ADDRESS

PowerBox-Systems GmbH
Ludwig-Auer-Straße 5
86609 Donauwoerth
Germany

8. LIABILITY EXCLUSION

We are not in a position to ensure that you observe our instructions regarding installation of the **MagSensor**, fulfil the recommended conditions when using the unit, or maintain the entire radio control system competently.

For this reason we deny liability for loss, damage or costs which arise due to the use or operation of the **MagSensor**, or which are connected with such use in any way. Regardless of the legal arguments employed, our obligation to pay damages is limited to the invoice total of our products which were involved in the event, insofar as this is deemed legally permissible.

We wish you every success using your new **MagSensor**!

Donauwoerth, July 2023

07/2023

PowerBox-Systems GmbH

Ludwig-Auer-Straße 5
86609 Donauwoerth
Germany

+49-906-99 99 9-200

www.powerbox-systems.com