PowerBox Systems ®

*World Leaders in RC
Power Supply Systems*

SPARK
SWITCH

Dear customer,

We are delighted that you have decided to purchase the **SparkSwitch** from **PowerBox-Systems**.

The **SparkSwitch** is a reliable high-performance ignition switch. The entire design of the **SparkSwitch** has deliberately been kept simple, whilst retaining all the important functions. The ignition switch is ready for use as supplied, and requires no set-up procedure. All you have to do is set up your radio control transmitter for use with the switch.

Please read right through these instructions, as they are designed to make you fully conversant with your new switch unit in a very short time.

We are confident that you will have many hours of pleasure and success with your **PowerBox SparkSwitch**.
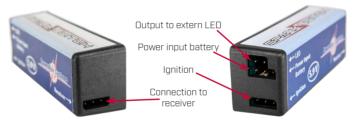
Specification
- Input voltage 4.0 – 9.0 V
- Regulated output voltage 5.9V, 7.4V or 12.0V
- Max. output current 2 A, peak 4.5 A
- External LED power-on monitor
- Power circuits isolated by opto-coupler
- Two different switching modes
- Current drain at receiver: 2 mA
- Current drain at switch side, power-on: 19 mA
- Current drain at switch side, power-off: 0.2 μA
- Fail-safe mode

- Weight including patch-lead: 22 g
- EMV approval: EN 550141-1:2006
- CE approval: 2004/108/EG
- WEEE Reg. No.: DE 639 766 11

2. EXTERNAL CONTROLS

The illustrations below show the essential external elements:

Output to extern LED

Power input battery

Ignition

Connection to receiver

3. FIRST STEPS BEFORE USING THE UNIT

3.1. CONNECTIONS

Connect all the leads as shown in the wiring diagram above. The final step is to connect the battery.

For safety reasons it is **absolutely essential** to connect the external LED. The external LED must be installed in a position where the pilot can clearly see it at all times when starting the engine.

Caution: if you do not install the external LED, the pilot will be unable to check the switched status of the ignition, and this involves unnecessary hazards.
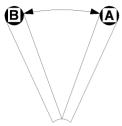
3.2. IGNITION BATTERY

All types of ignition battery can be used: i.e. 2S LiPo, 2S LiFePo, 5S NiCd or NiMH. Regardless of battery, the integral regulator always limits the voltage to 5.9 V, which means that the **SparkSwitch** can be used with all ignition units such as 4.8 V, 6.0 V and 7.4 V types.

The ignition battery can be left connected to the **SparkSwitch** permanently. When switched off, the unit draws such a low current (only 0.2 μA!) that it will not discharge the battery - even over a period of months or years.

3.3. SETTING UP THE TRANSMITTER

There are two methods of switching the unit on, according to the transmitter set-up. Please note: 0% means servo centre, -100% and +100% means the two servo

end-points. If you are using a Futaba transmitter the prefixes must be reversed, i.e. + equates to -.

Normal mode:

Switch position A is programmed to **0%** at the transmitter, and is always the **"OFF"** position.

Switch position B is programmed to **+100%** at the transmitter, and always switches the **SparkSwitch "ON"**.
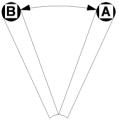
If no valid signal is present at the receiver, the **SparkSwitch** switches itself off. Ideally you should program the transmitter's fail-safe function so that the **SparkSwitch** cuts the engine if the signal is lost.

Safety mode:

Switch position A is programmed to **0%** at the transmitter.

Switch position B is programmed to **-100%** at the transmitter.

The switching procedure is as follows: move the switch from A to B to prepare the **SparkSwitch** for the switching process; this alters nothing at the **SparkSwitch**'s output. The unit's switched state only changes when the switch is moved back to the A position.

This means: if you accidentally operate the switch on the transmitter during a flight, this does not switch off the **SparkSwitch**. Non-latching transmitter switches are ideal for this mode: pull the switch and release it in order to switch the ignition on; repeat the procedure to switch the ignition off again.

If no valid signal is present, the **SparkSwitch** always switches itself off, and stores the last switched state. This means: if a signal is picked up again, the **SparkSwitch** reverts either to "ON" or "OFF", according to its previous switched state.

Ideally the transmitter's fail-safe function should be programmed so that the throttle flap closes and stops the engine.

4. SET CONTENTS

- **PowerBox SparkSwitch**
- 1 x 3-core patch-lead
- 1 x external LED
- Operating instructions

5. SERVICE NOTE

We make every effort to provide a good service to our customers, and have established a Support Forum which covers all queries relating to our products. **Please use the Support Forum before you contact us by telephone.**

You can find the forum at the following address:
www.forum.powerbox-systems.com

6. GUARANTEE CONDITIONS

We take the maintenance of the highest quality standards very seriously. That is why **PowerBox-Systems GmbH** is currently one of the few RC electronics manufacturer certified to the Industrial Norm **DIN EN ISO 9001**.

As a result of this quality management, which applies to development and production, we are able to grant a **guarantee of 36 months** on our products, commencing on the initial date of purchase. The guarantee covers proven material faults which occur during the guarantee period; such defects will be corrected by us at no charge to you.

7. LIABILITY EXCLUSION

We are not in a position to ensure that you install and operate this ignition switch correctly, nor that the entire radio control system has been maintained properly.

For this reason we are unable to accept liability for loss, damage 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 **SparkSwitch** and hope you are completely satisfied with it!

Donauwoerth, July 2018

PowerBox-Systems GmbH
certificated according to DIN EN ISO 9001

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