PowerBox Systems®

*World Leaders in RC
Power Supply Systems*

VOLTAGE
REGULATOR

Dear customer,

the **voltage regulator** is designed to supply a defined, stabilised voltage to your receivers and servos. It is a compact, lightweight device with an excellent performance, and has been developed and manufactured in-house.

This unit enables you to use modern **LiPo, LiIon, NiMh or LiFe** batteries as the power supply in your models.

The device is based on an IC which delivers a regulated linear voltage of **5.3 or 5.9 Volt**; these values are fixed, and cannot be altered.

A constant voltage substantially increases the effective life of all the components of your RC system, but especially of the servos. The totally unvarying voltage provides a substantial increase in the useful life of all components, but especially of servos. Since the regulated voltage is maintained at an absolutely constant level, all servos always operate with equal power and speed - regardless of load.

Any servo feedback currents which may arise are reliably eliminated by an electrolytic capacitor of generous capacity. Since the **voltage regulator** weighs just **12.5 grammes** it can be installed in any model without imposing a significant weight increase.

The regulator has proved particularly useful in small to medium-sized fixed-wing model aircraft and helicopters, and for ignition systems. It can also be used to reduce the voltage to individual servos or other RC system components.

The signal wire is looped through the regulator, enabling the unit to be used to power individual servos at a reduced voltage. This arrangement is primarily of interest where the main RC system power supply is designed for HV servos (7.4 V), but where one or two servos are not approved for use at the higher voltage. In this case the non-HV servos can be plugged into the **voltage regulator** and used in the normal way. These are often tail rotor servos or electronic components such as lighting units, valves etc., which must be operated at a lower voltage than the other parts cf the receiving system. The unit can be connected using a Uni, JR or Futaba connector. **Caution! Connecting the battery plug offset to one side will instantly ruin the regulator.**

The JR lead attached to the **voltage regulator** can be plugged directly into the receiver socket.

If you wish to use a switch in the receiving system power supply circuit, we recommend that you fit it between the **voltage regulator** and the battery.

It is also feasible to use LiPo batteries with our **PowerBox 12** switch backer (without integral voltage regulation) if you connect one **voltage regulator** to the system for each battery.

The regulator can supply 2 to 3 Ampere - according to battery type and cooling efficiency - which is adequate for models fitted with 6-8 standard servos or 4-5 digital servos. Since any voltage regulating device generates waste heat (varying according to current drain and input voltage), the regulator should always be installed in an open position in the modal, i.e. not enclosed.

The regulater is completely encapsulated using the modern „hot melt" process; this renders it totally impervious to vibration and moisture of all kinds.
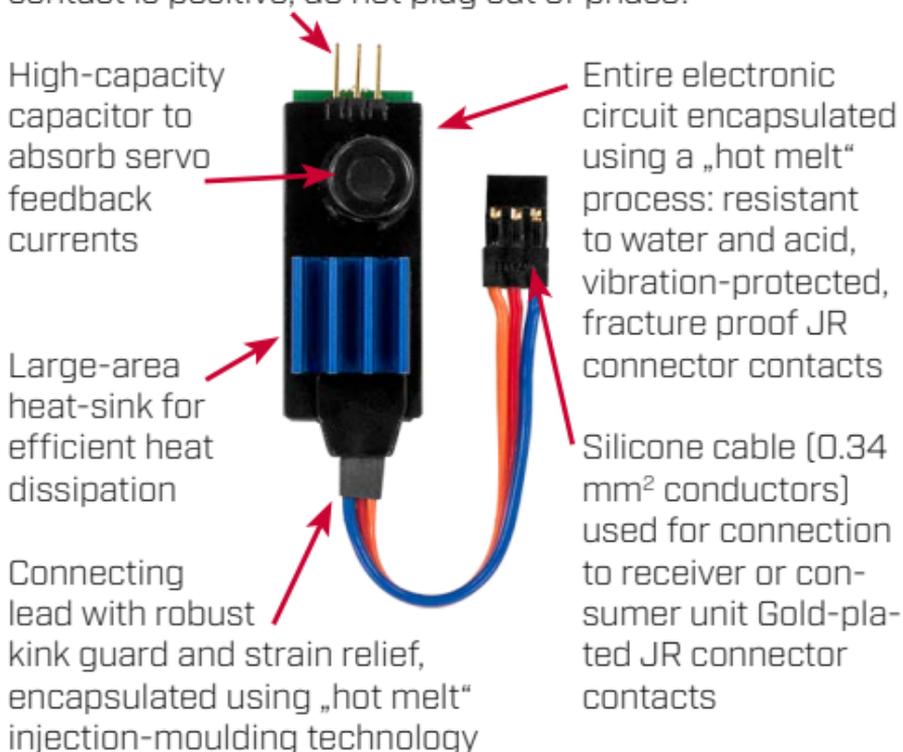
Specification

Voltage range:	4.0-9.0 Volt
Regulated voltage:	Pre-set **5.3** or **5.9** Volt, according to Order Number
Performance:	Regulated 2.0 - 3.0 A, according to cooling measures and input voltage
Max. performance:	Peak (brief) 10 A
Regulator losses:	0.14 Volt
Temperature range:	-30°C to +75°
Weight:	12.5 grammes

EMV tested: EN 55014 - 1 and EN 55014 - 2
CE tested: 2004/108/EG, certificated dated 10.03.2009

Approved only for use with a two-cell LiPo/LiIon or LiFe battery or a five-cell NiMh battery. **The device must not be used in conjunction with a mains PSU!**

contact plugs for connecting the power source: centre contact is positive, do not plug out of phase!

High-capacity capacitor to absorb servo feedback currents

Entire electronic circuit encapsulated using a „hot melt" process: resistant to water and acid, vibration-protected, fracture proof JR connector contacts

Large-area heat-sink for efficient heat dissipation

Silicone cable (0.34 mm² conductors) used for connection to receiver or consumer unit Gold-plated JR connector contacts

Connecting lead with robust kink guard and strain relief, encapsulated using „hot melt" injection-moulding technology

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 **36 month guarantee** on our **voltage regulator** 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
D-86609 Donauwoerth
Germany

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LIABILITY EXCLUSION

We are not in a position to ensure that you observe our instructions regarding installation of the **voltage regulator**, 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 **voltage regulator**, or which are connected with such use in any way. Regardless of the legal arguments employed, our obligation to pay compensation 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 **voltage regulator**.

Donauwoerth, February 2018

PowerBox-Systems GmbH

certificated according to DIN EN ISO 9001

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