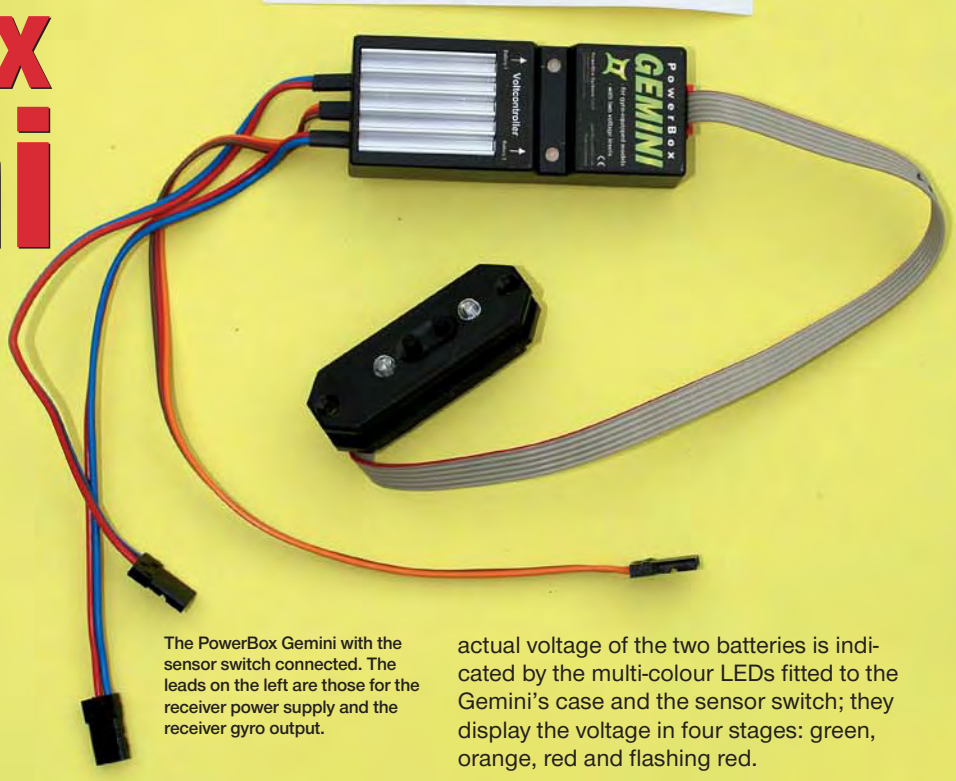
PowerBox Gemini

Standing still equates to moving backwards: this little saying seems to be printed on the flag of Emmerich Deutsch's company, PowerBox Systems, as he is constantly working hard to fine-tune his range of power supply systems to meet his customers' requirements.



The PowerBox Gemini with the sensor switch connected. The leads on the left are those for the receiver power supply and the receiver gyro output.

The latest addition to the family of PowerBox Systems is the Gemini, which offers the following features:

- Linear stabilised receiver voltage of 5.9 Volts
- Second stabilised voltage level of 5.3 Volts for gyros
- Dual independent battery monitoring systems
- Minimum value storage
- Two independent linear regulators
- Protection from reverse-flow voltage generated by servo motors
- Switchable between LiPo and NiCd bat teries
- Electronic safety switch.

The battery backer function of the PowerBox Gemini is based on two high-performance 12-Amp dual Schottky diodes, which are housed in one case. This arrangement results in a minimal voltage drop (0.25 Volt) in operation. The Gemini is fitted with two independent systems; this manifests itself in slightly differing battery capacities after a series of flights. The actual voltage of the two batteries is indicated by the multi-colour LEDs fitted to the Gemini's case and the sensor switch; they display the voltage in four stages: green, orange, red and flashing red.

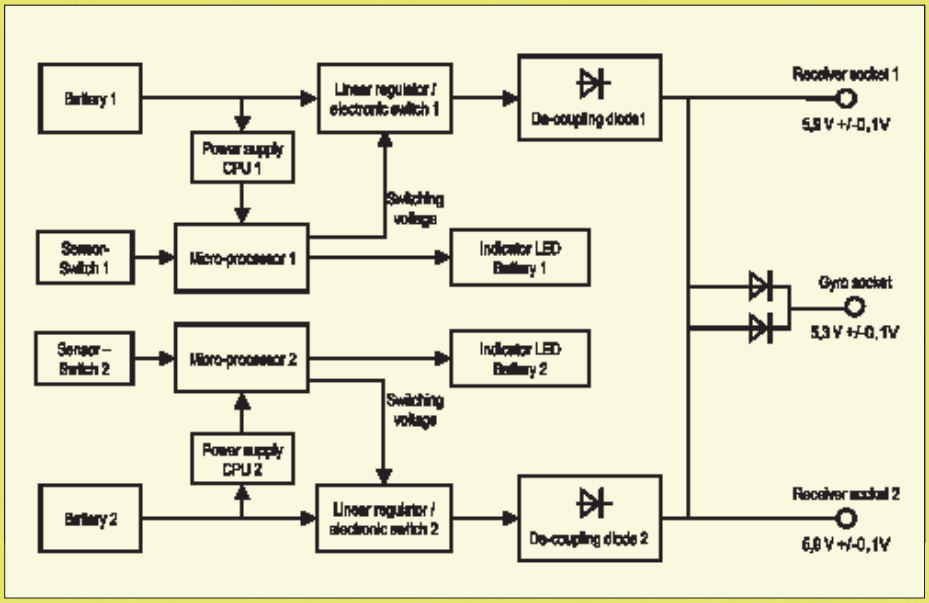
The minimum value memory can be displayed by pressing the two sensor buttons simultaneously before you switch the Gemini off. Switching the unit off automatically resets the memories.

The batteries are connected using two Uni or JR sockets, and power is fed to the receiver via two servo leads (blue / red) consisting of 0.34 mm_ heavy-duty cable. The third servo lead is connected to the receiver output which controls the gyro or the gyro servo. At the other end of the Gemini is the red socket for the sensor switch, and adjacent to that is the socket for the gyro. At that point the gyro signal from the receiver is present, together with a second voltage level of 5.3 Volts.

By default the Gemini is set up for use with LiPo batteries. If you wish to connect a pair of five-cell NiCd batteries, the unit

The picture on the right shows the two sockets for the batteries. Below them are the cable outputs for the receiver power supply and the receiver gyro output.

Bottom: a view of the Gemini showing the two voltage monitor LEDs.



must be switched over using the switch sensor buttons: first the batteries are connected, then the sensor switches must be pressed and held in the proper sequence until the appropriate green LED flashes twice. If LiPo batteries are to be used, I recommend either the PowerBox Battery 1500 or the PowerBox Battery 2800: both contain fully independent charge and security circuits, including a supplementary balancer and low-voltage monitor. These batteries have proved excellent in practice, as their robust plastic case provides a broad safety margin, while the integral automatic charge circuit makes them child's play to handle.

Winfried Ohlgart.

At the other end of the case is the socket for the sensor switch, with the gyro socket above it on the left.

Specification

Operating voltage	4,0 to 9,0 Volts
Power supply	two 5-cell NiCd or NiMH batteries two 2-cell LiPo batteries, 7,4 Volt
Current drain	approx.. 30 mA
Coltage drop	approx. 0,30 V
max. receiver current	2 x 4 A (stabilised)
Serco / gyro supply voltage	5,9 / 5,3 Volt
Max. continuous current	10 A
Temperature range	-10 °C bis +75 °C
Dimensions (L x W x H) in mm	72 x 28 x 14
Weight	32 g iincluding all leads
Sensor Switch	12 g
Price	€ 119.00
Source	PowerBox Systems, D-86609 Donauwörth www.powerbox-systems.com