

Zwo4E9

2.4GHz
9 channel
R/C receiver

Set Contents

- 1 x 2.4 GHz transceiver unit
- 1 x 9 channel decoder
- 1 x Battery sensor cable with plug
- 1 x Jumper

Specifications

Servo channels:	9
Multi-Switch support:	Up to two on channel 7, 8 and/or 9
Servo signals:	PPM Standard 0.8 to 2.2ms, 45 Hz
Transceiver output:	Approx. 1.6 mW
Special features:	Remote signaling of receiver and main battery voltage, remote on/off of up to three models
Operating voltage:	4.8 to 6 V approx. 60 mA, optional 7.2 to 12 V from main battery
Dimensions:	Transceiver 45x25x12mm Decoder 40x30x15mm

Quick Start

- 1) Remove the servo plugs from your old receiver channel by channel and put them in the same channel of the new Zwo4 decoder. Note correct connector polarity, see label.
- 2) Place the black transceiver unit inside the model and connect it with the decoder. For plastic cabs we recommend the assembly under the roof, antenna upside down. For metal cabs place the transceiver also under the roof, but let the antenna point through a hole vertically upwards/outside.

For modelboats please notice: The higher the black transceiver module is mounted, the better the range. Wood and plastic parts do not interfere. Keep the antenna at least 2 inches away from wires, metal and carbon parts, if possible.
- 3) Bind receiver and transmitter. Remove the jumper from the decoder, then power on the model. Set the „Modell“ selection switch on the Zwo4 transmitter to the desired position, then press and hold the „Binden“ switch down while turning on the transmitter. After the „Binden“- LED lights up green, insert the jumper in the decoder in the position „AB“.
- 4) Look at the „Binden“ LED during the first test run, in case of a limited range (LED turns red) try to improve the installation of the transceiver.

Binding of Receiver and Transmitter

A 2.4 GHz systems works without the need to change crystals and does not use fixed frequency channels. Each transmitter has a unique identifier code. During the binding process, the receiver stores the identifier of the transmitter. After successful binding the receiver will only listen to data from „his“ transmitter and ignore everything else. It is usually only necessary to bind the receiver and transmitter once.

The only time it is necessary to bind again is if you wish to use a different transmitter or to change the model switch position for your model.

Important: For safety reasons the binding will work only on a short distance. Keep the transmitter close to the model.

Jumper Settings

The channels are arranged from the left to the right from 1 to 9 (see label). Beside the 9th channel there is a three pin header for a jumper. The jumper is recognised at power up only.

- Remove jumper for binding
- Install jumper on BC for battery setup
- Install jumper on AB for normal operation

Decoder LEDs

Beside each servo connector there is a red LED. A green LED is located next to the jumper header. These LEDs indicate different operating states:

- Fast bright red running light: The receiver is in binding mode
- Slow red running light: The receiver is searching „his“ transmitter. The transmitter is probably switched off or is out of range
- Green flickering: The receiver is connected with the transmitter
- Alternate flashing of channel 9 and green LED: Connection disturbed or interrupted
- Red flickering of single channel LEDs: indicates channel activity
- Two red LED's at the same time: The receiver is in battery setup mode

With the help of the LEDs the channel usage of the transmitter can be found out very easily. Move the stick or switch the desired channel and the flickering of the corresponding decoder LED will indicate the servo header of this channel.

Servonaut



Decoder label on lower side

Remote Monitoring of the Battery Voltage

The Zwo4 decoder measures the servo and receiver voltage and, if required, can also monitor the voltage of the main battery in the model. Both data is send back to the transmitter module. The transmitter indicates the voltage level with a two color LED next to the model switch. (See Zwo4 transmitter manual)

If you wish to monitor the main battery, use the red cable with red plug to connect the battery positiv pole to the decoder. You might use a "+" clamp of a Servonaut M20+ or MM4/ML4 for example. The decoder and transceiver will then be powered by the main battery. Important: Switching off a speed controller like a M20+ or T20 will no longer switch off the decoder or tranceiver. To select the main and receiver battery or BEC voltage level follow these steps:

- Install jumper on BC
- Turn on your model ie. the decoder
- Wait until the correct LED code is indicated (See fig.1)
- Remove the jumper immediately
- Reinstall the jumper on AB

Example: For a 5V BEC and a 12V battery wait until the LEDs on channel 1 and 4 light up, then remove the jumper.

A wrong setting cannot damage or disturb the decoder, but the transmitter LED will not indicate a correct battery status.

Important: The decoder has no extra battery connector for the servo power supply. If you wish to use a receiver battery this battery might be connected on any free channel connector.

Remote On/Off Switching of the Model

With the Zwo4 System you can switch on/off up to three models by remote control. A decoder that is not activ (ie. switched off by remote) will not send any signals to servos or other connected electronic parts like speed controllers.

Important: Some speed controllers or light sets might not stop when they get no signal. Please check this before the first test run. In case of problems you might add a Servonaut AN40 electronic power switch.

Hints

It is easier to install the jumper if a servo connector on channel 9 is removed first.

The black transceiver module gets warm, this is normal. Don't cover the module or wrap it in foam.

If the red LED of a channel in the decoder is flickering constantly, a Multiswitch/Multiprop module sends data on this channel.

For a Lipo Battery 2s / 7.4 V please choose the setting for 6 cells.

For a Lipo Battery 3s / 11.1 V please choose the setting for 9 cells.

Legal Issues

Servonaut Zwo4 is using the 2.4GHz ISM-Band. The output power is below 10mW EIRP. It conforms to the european R&TTE directive. The declaration of conformity can be requested at mail@servonaut.de. Zwo4 might not be legal outside europe.

Safety Notes

- Do not connect the battery with wrong polarity
- Avoid any short circuits
- Do not expose module to water or oil
- Always be careful when connecting the battery
- Disconnect the battery immediately after use
- The Zwo4 system is designed for use in battery operated RC Models only

Warranty Information

Warranty is granted for one year from date of purchase. This warranty does not cover damage due to incorrect handling or wiring, over voltage, or overloading. This warranty does not cover consequential, incidental or collateral damage under any circumstances. By the act of using this product the user accepts all resulting liability.

Servo Power Supply	Main Battery	1	2	3	4	5	6	7	8	9
4 Cells / 5V BEC	6 Cells / 7.2V				X		X			
4 Cells / 5V BEC	7 Cells / 8.4V				X			X		
4 Cells / 5V BEC	8 Cells / 9.6V				X				X	
4 Cells / 5V BEC	9 Cells / 10.8V				X					X
4 Cells / 5V BEC	10 Cells / 12.0V	X			X					
4 Cells / 5V BEC	12 Cells / 14.4V		X		X					
5 Cells / 6V BEC	6 Cells / 7.2V					X	X			
5 Cells / 6V BEC	7 Cells / 8.4V					X		X		
5 Cells / 6V BEC	8 Cells / 9.6V					X			X	
5 Cells / 6V BEC	9 Cells / 10.8V					X				X
5 Cells / 6V BEC	10 Cells / 12.0V	X				X				
5 Cells / 6V BEC	12 Cells / 14.4V		X			X				

Fig. 1: Battery Settings