

# ***X-Pro-Series Speedcontroller Help-File***



Release: 02/06

- **Battery**

- Choice of the used battery type
  - **NiCd/NiMh**
    - Here you select the batterytyp: NiCd or NiMh. The number of cells is recognized automatically by the ESC.
  - **Lilon/LiPo**
    - Here you select the batterytyp: Lilon oder LiPo. The number of cells can be selected below.

- **Under Voltage**

- Choice of under voltage action
  - **Reduce power**
    - With reaching the adjusted undervoltage the **X-Pro CONTROLLER** will reduce the power of the motor to save the battery. You should land or stop driving as soon as possible, in order to protect the battery against a deeper unloading. Reduce Power is recommended for motorplanes and helicopters.
  - **Switch off**
    - With reaching the adjusted undervoltage the **X-Pro CONTROLLER** will stop the motor to save the battery. This is recommended for electric gliders.
  - **Ignore**
    - NOTE! The battery is not protected against to deep unloading. Ignore can be used by heli pilots, who control the flying time of their model with a stop clock in the transmitter. Any undervoltage switching off criteria are deactivated. The pilot must be able to estimate the maximum flying time exactly.

### **Threshold V/Zelle**

Here you set the voltage per cell, from which the undervoltage criteria begin to work. Please ask your dealer which values for the battery are recommended.

For example battery sold by HACKER:

Battery- Manufacturer	100% battery protection	Compromise from achievement and battery protection	Extrem power and experienced user
E-Tec	3,1V	3,2V	2,9V
HP-Q	3,1V	3,2V	2,9V
Flight-Power	3,1V	3,2V	2,9V
ThunderPower	3,1V	3,2V	2,9V

- **RPM Control**

- Activ RPM control for helicopter
  - **Activ**
    - [klicken here for active RPM control.](#)
  - **Range 1**
    - Electric RPM up to 20 000 RPM (2 pole motor, 4 pole motor up to 10000 RPM ...)
  - **Range 2**
    - Electric RPM up to 50 000 RPM (2 pole motor, 4 pole motor up to 25 000RPM...)
  - **Bereich 3**
    - Electric RPM above 50 000U/min (2 pole Motor, 4 pole motor above 25 000U/min, 10 pole motor above 10 000 U/min...), max ~160 000U/min electr. RPM

- **Motor-Control**

- choice of some motor control parameters
  - **Brake**
    - off, on-hard. on-soft
  - **Timing**
    - Different modes:
      - auto , automatic Timing. The X-PRO ESC calculates even that for the moment optimal timing. Fits for almost each application
      - 2°, for two pole motors. For example: Hacker inside runners. Please see the manual of your motor.
      - 8°, for 4 pole motors. Please see the manual of your motor.
      - 15°, for 8 pole motors. Please see the manual of your motor.
      - 22° , for 10 or 14 pole motors for example: Hacker outrunners. Please see the manual of your motor.

- 30° , for 14 or more pole motors. Please see the manual of your motor.

#### **Acceleration**

- „Low“ for speedup slowly. Used in helicopters or motors in gliders with gearbox and large props.
- „Medium“ speedup time.
- „High“ for fast acceleration as used in Funflyers for example.

- **Reverse Rotation**

- Let's the motor turning in the opposite direction

- **Frequency**

- **8kHz**

- recommended for most motors

- **16kHz**

- Choose only in individual cases! Please consider the operating instructions/technical data of the used motor. If you find no data there, please use the 8kHz .

- **ESC-Software**

- Firmware of the ESC. At [www.hacker-motor.com/controller/update](http://www.hacker-motor.com/controller/update) you can find the latest software release. See "Data transfer"

- **Data transfer**

- **Read settings**

- Read which type of ESC is connected and the set up program makes the possible parameters available.

- **Send settings**

- After the parameters were changed, the Button "send settings" will transferred the new data to the ESC. If the data transfer was successfully, a "OK" is shown in the indication area.

- **Update**

- After click the "Update" Button, the software shows the firmware which is stored in the file.../hacker motor/updates. Please select the new firmware and transfer to the ESC. After successful transferring "update is successfully indicated". Attention, all values in the ESC are overwritten! Any changes at the parameters must again be selected and transferred.

- **Connection-Status**

- **USB**

- Lights green if the connection from computer to the interface is activ.
- Lights red:
  - USB-cable or USB-Interface is not connected
    - USB-driver not installed correctly.  
The necessary driver is in the file../Hacker Motor/driver/..
- **ESC**
  - Lights green if the connection from computer to the interface and ESC is activ.
  - Lights red:
    - No ESC connected
    - The recieverplug is connected to the interface in wrong direction. Please plug as shown on the interface.
    - BEC-Types, switch must be in ON-position
    - ESC typ is not a X-PRO. **Only ESC of the X-Pro-Series are able to work with the USB-interface and the Setup-Software.**
    - **Connect a battery-pack at the Opto-Versions of the X-Pro ESCs to supply power to the Microcontroller**

If you have any questions, feel free to contact us.

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