

LipoDecoupler

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With this decoupler it is more safe to connect two or more Lipos in parallel.

It prevents a total power loss in the case that one Lipo makes a shortcut. Basically it acts like a smart diode with (almost) no power loss. A high reverse current would happen in case of a short circuit of one Lipo. This Lipo would be disconnected in that case and can't pull down the Voltage of the other Lipos. The PCB also prevents high charging currents if someone connects a full lipo parallel to an empty lipo.

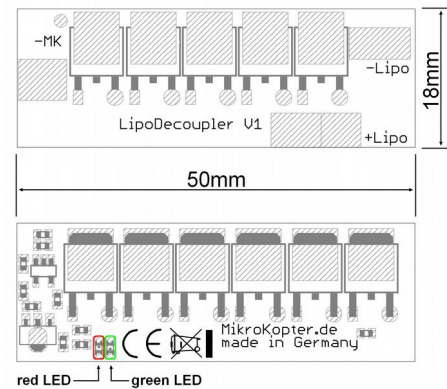
But our LipoDecoupler can even more: it allows a reverse current of 10A and switches off if the current goes over 10A.

With the limited reverse current, the active braking of the propellers is not effected -> the power of the rotating propellers can still go back into the Lipo.

For each used LiPo you need an own LipoDecoupler.

Technical data

- Dimensions: ~ 18 x 50 mm
- Weight: 9g (without cables)
- Voltage: 2-7S (6-35V)
- 50A continuous current
- 150A peak (15 Sek.)
- Impedance: 0,0005 Ohm
- Voltage loss: 0,02V at 40A
- Power loss: 1,0W at 40A
- Reverse current (Energy recovery)
 - Reverse currents below 10A are possible.
 - It switches off faster than 1ms in case of reverse overcurrent >10A is switching off -> then the current falls back to 0A.
 - In case of switch off, the PCB would switch on again if the current goes back in forward direction. So, it can never happen, that they would remain switched off in case of a short shortcut.

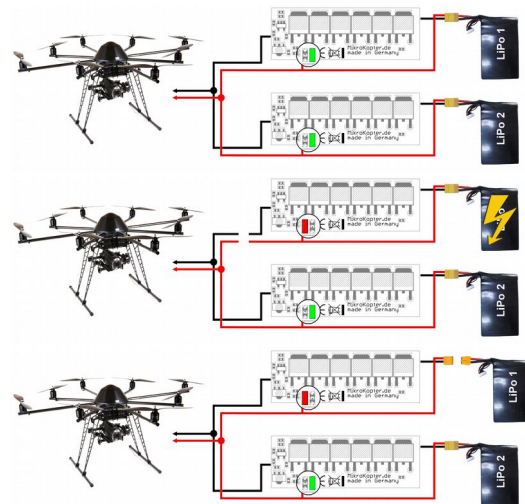


LED display

Green LED => A working LiPo is connected to the input

Red LED => On the input you have a short circuit
→ The supply line has been disconnected.

Red LED => At the output a voltage is applied
(e.g. a redundant LiPo was already connected to the second LipoDecoupler)
and a LiPo is still not connected.
As soon as a LiPo is connected, the display changes to green.



Function test

There are 2 LipoDecoupler used at the copter and a LiPo is connected on each LipoDecoupler. On both LipoDecouplers the green LED is on. Remove the Lipo from the LipoDecoupler you will test → the green LED is still on.
A short circuit at the input will be made, immediately the green LED must be off and the red LED on.

Connection example

