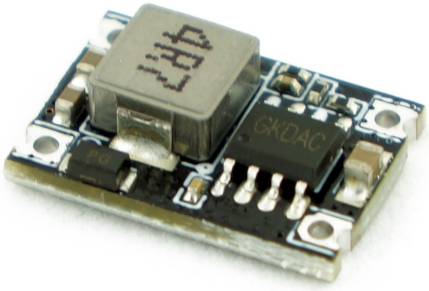
BEC 5V 3A

Switching voltage regulator 5 V / 3 A
User manual



Read the entire manual before wiring. The input voltage must not exceed 26 V.

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1. Product description

1.1 Purpose

The **BEC 5V 3A** is a small switching voltage regulator (BEC – Battery Eliminator Circuit) that converts the flight battery voltage into a regulated **5 V** supply. It powers devices that require 5 V and cannot be connected directly to the battery – typically video transmitters (VTX), FPV cameras or LEDs.

The regulator is a bare assembled circuit board measuring 19 × 12 mm, without a housing and without wires. It is installed in the model by soldering wires to four solder pads: two for the battery input and two for the 5 V output to the load. It can handle up to **3 A** for short periods; for continuous operation the current should be limited to **1.6 A**.

BEC 5V 3A – component side

1.2 Specifications and package contents

Product designation	BEC 5V 3A
Type	switching voltage regulator (BEC)
Input voltage	7–26 V
Output voltage	5 V
Maximum current	3 A
Continuous current (recommended)	1.6 A
Board dimensions	19 × 12 mm
Package contents	1× BEC

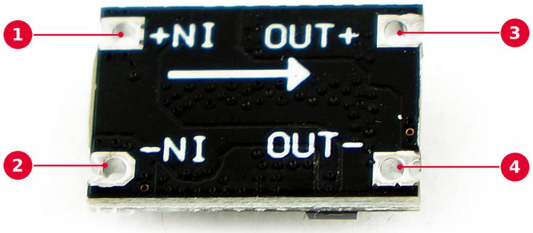
Not included: wires, connectors, heat-shrink tubing or any other insulating material – these must be obtained separately. You will need a fine-tip soldering iron and solder for installation.

The board carries no type label. The product is identified by the designation **BEC 5V 3A** given in this manual and in the seller's listing.

2. Use

2.1 Pad layout

The solder pads are labelled on the underside of the board. The arrow between the labels points from the input to the output. The input pads are labelled **+NI** and **-NI** on the board (i.e. IN+ and IN−).



Underside of the board with solder pads

① **+NI (IN+)** – input, battery positive (7–26 V)

② **-NI (IN−)** – input, battery negative (GND)

③ **OUT+** – +5 V output to the load

④ **OUT−** – output negative (GND) to the load

2.2 Wiring

① Disconnect the battery from the model. Always solder with the power off.

② Make sure that your battery voltage stays within **7–26 V** under all conditions (see table below) and that the load is designed for a **5 V** supply.

③ Solder the input wires: positive to pad ① **+NI**, negative to pad ② **-NI**. Connect the input to the battery power pads (e.g. on the electronic speed controller (ESC) board or on the power distribution board).

④ Solder the output wires: ③ **OUT+** to the 5 V supply input of the load, ④ **OUT−** to its ground (GND).

⑤ Before connecting the battery for the first time, check the polarity and use a multimeter to make sure there is no short circuit between the positive and negative poles of either the input or the output.

⑥ Insulate the board (e.g. with heat-shrink tubing) so that the pads and components cannot touch the frame or any other conductive parts – **a carbon frame is electrically conductive**.

⑦ Connect the battery and measure 5 V at the output. Only then connect the load, unless you have soldered it directly.

▶ **Input voltage check for Li-Po batteries (guide)**

Battery	Fully charged	End of flight (3.5 V/cell)	Suitability
2S Li-Po	8.4 V	7.0 V	at lower limit
3S–5S Li-Po	12.6–21.0 V	10.5–17.5 V	within range
6S Li-Po	25.2 V	21.0 V	within range
6S LiHV	26.1 V	21.0 V	**not suitable**

Values correspond to 4.20 V/cell (Li-Po), 4.35 V/cell (LiHV) and 3.5 V/cell at the end of flight.

※ A fully charged 6S LiHV battery (26.1 V) exceeds the maximum input voltage of 26 V and could destroy the BEC. With a 2S battery, the voltage at the end of flight drops to the lower limit of 7 V.

2.3 Load and operation

- The maximum current is **3 A**. For long-term operation, limit the current to **1.6 A** – the regulator heats up at higher currents.
- Add up the current draw of all loads connected to the output (VTX, camera, LEDs) and check it in their documentation. High-power video transmitters may draw more.
- Mount the BEC where it gets airflow inside the model and do not cover it with other heat sources (ESC, video transmitter).
- The output is intended only for loads powered by 5 V. Do not connect it in parallel with another 5 V source.

2.4 Safety instructions

- Do not apply more than 26 V to the input and do not swap input and output or reverse the polarity. No information on reverse polarity protection is available – do not rely on it.
- Solder only with the battery disconnected. A short circuit on a Li-Po battery can cause burns or fire.
- The board gets warm during operation. Do not touch it immediately after switching off and do not use it near flammable materials.
- Do not use a damaged board, a board with a lifted pad, or a board that has been in contact with water.
- This product is not a toy. Keep out of reach of children – small parts present a choking hazard.

2.5 Troubleshooting

Problem	Possible cause and solution
No voltage at the output	Check the solder joints and the input polarity. Make sure the input voltage is within 7–26 V.
The load restarts or switches off	The current draw is too high or the input voltage drops towards 7 V. Reduce the load; with a 2S battery end the flight earlier.
The BEC gets very hot	The continuous current exceeds 1.6 A or cooling is insufficient. Reduce the load and ensure airflow.
Camera image interference	Keep the wires as short as possible and solder the load ground to the OUT− pad.

3. Information for the EU and Czech Market

3.1 Importer and responsible person in the EU

The product is placed on the European Union market by the importer stated below, who is at the same time the responsible person within the meaning of Article 16 of Regulation (EU) 2023/988 of the European Parliament and of the Council on general product safety (GPSR).

Importer / responsible person in the EU	Rotorama, s.r.o.
Company ID (IČO)	051 57 692
VAT ID (DIČ)	CZ05157692
Registered office	Okrajová 1351, 674 01 Třebíč, Czech Republic
E-mail	info@rotorama.cz
Phone	+420 252 252 098
Website	www.rotorama.com

3.2 Disposal of electrical equipment

- The crossed-out wheeled bin symbol on the product, its packaging or in the documentation means that at the end of its service life the product **must not be disposed of together with mixed municipal waste**.
- Hand it over at a take-back point for electrical equipment – at a collection yard, at a take-back point of a collective system, or at the retailer when purchasing a new equivalent product. Take-back is free of charge for the end user.
- The obligations under Act No. 542/2020 Coll., on end-of-life products, are fulfilled by the importer through a collective take-back system.
- Proper disposal helps prevent negative impacts on the environment and human health and contributes to the reuse of secondary raw materials.

Through its contractual partner **ASEKOL a.s.**, the company ensures the take-back of waste electrical equipment from households and the separate collection of waste electrical equipment, batteries and accumulators in accordance with the applicable legislation. The customer is entitled to hand over old electrical equipment or a battery or accumulator at any collection point of the above contractual partner. The addresses of these take-back points are listed at www.asekol.cz, www.ecobat.cz and also https://visoh2.mzp.cz/RegistrMistZO/RegistrMistZOPublic/MapaMistZpetOdberu.

4. Warranty and rights arising from defective performance

The rights and obligations of the contracting parties are governed by Czech law, in particular by Act No. 89/2012 Coll., the Civil Code, and Act No. 634/1992 Coll., on consumer protection.

- The seller is liable to the buyer for the product being free of defects on receipt. If the buyer is a consumer, a defect may be notified **within two years of receipt** of the product (Section 2165 of the Civil Code).
- If a defect appears within **one year** of receipt, the product is deemed to have been defective already at the time of receipt (Section 2161(5) of the Civil Code).
- When purchasing online, a consumer has the right to **withdraw from the contract within 14 days** of receiving the goods without giving a reason (Section 1829 of the Civil Code).
- Claims should be made with the retailer from whom you purchased the product. The importer's contact details are given in Chapter 3.1.
- The competent body for out-of-court settlement of consumer disputes is the **Czech Trade Inspection Authority**, Štěpánská 796/44, 110 00 Prague 1, www.coi.cz.