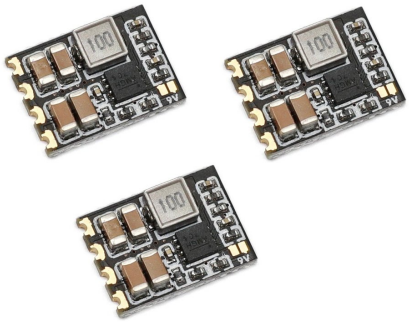
Matek Micro BEC 6–30 V

Step-down voltage regulator 5 V / 9 V, 1.5 A – pack of 3
User manual



The output is factory-set to 5 V. Read Chapter 2 before wiring – exceeding the 30 V input voltage or reversing the polarity may destroy the module and the connected load.

Importer: Rotorama, s.r.o. · www.rotorama.com

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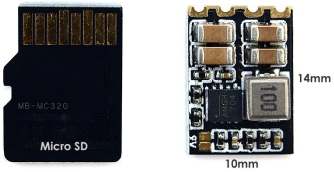
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1. Product description

1.1 What it is for

The Matek Micro BEC 6-30V to 5V/9V-ADJ by Matek Systems is a miniature synchronous step-down voltage regulator. From an input voltage of 6–30 V, typically the model's flight battery, it produces a regulated output voltage of 5 V or, after bridging the 9V pad, 9 V. It delivers a continuous current of 1.5 A.

It is used to power auxiliary electronics in models and FPV drones that need a separate 5 V or 9 V supply and must not be connected directly to the battery – for example LEDs, cameras, receivers or other devices. Measuring 10 × 14 mm and weighing 1 g, it fits even into small models. The package contains three identical modules.



BEC module compared with a microSD card

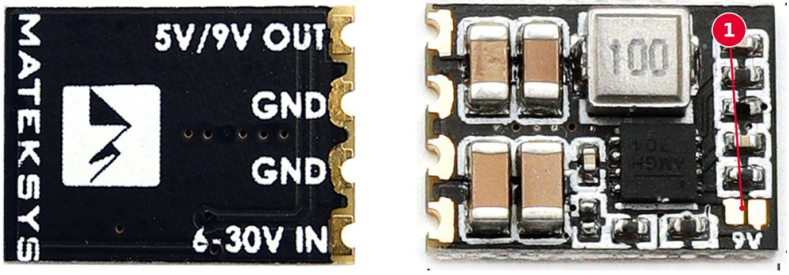
1.2 Technical data and package contents

Product designation	Matek Micro BEC 6-30V to 5V/9V-ADJ
Type	synchronous step-down regulator
Input voltage	6–30 V
Output voltage	5 V (default) or 9 V (by bridging the 9V pad)
Continuous output current	1.5 A
Short-term current	max. 2.5 A, for no more than 5 s per minute
Output load regulation	2 %
Standby current	< 5 mA
Max. duty cycle	95 %
Protection	overcurrent protection (OCP, hiccup), thermal shutdown, output short-circuit tolerant (5 s per minute)
Pin pitch	2.54 mm
Dimensions / weight	10 × 14 × 3 mm / 1 g (1 module)
Package contents	3× BEC module
Not included	wires, connectors, pin header, heat-shrink tubing

2. Use

2.1 Pin description

The module has four solder pads with a 2.54 mm pitch along one edge. Their functions are printed on the bottom side of the board:



Left: bottom side with pin labels; right: top side with the 9V pad ①

Pin	Function
6-30V IN	power input, positive (+), 6–30 V
GND	ground (−) – two pins: for input ground and output ground
5V/9V OUT	power output for the load (+), 5 V or 9 V
① 9V	pad for selecting the 9 V output voltage (see Chapter 2.3)

2.2 Wiring

① Make sure the supply voltage is within **6–30 V** and always higher than the required output voltage. For a 9 V output the input voltage must be **higher than 10 V**.

② Select the output voltage (Chapter 2.3) – always before connecting power.

③ With the power disconnected, solder the wires: positive of the source to **6-30V IN**, negative to **GND**; positive wire of the load to **5V/9V OUT**, negative to the other **GND** pin. Instead of wires, a pin header with a 2.54 mm pitch can be soldered on.

④ Before connecting the load, connect power and measure the no-load output voltage with a multimeter. It must match the selected value.

⑤ Insulate the module, for example with heat-shrink tubing, and mount it so that it does not touch any conductive parts – especially a carbon frame, which is electrically conductive.

⑥ Connect the load. The total continuous current of all connected devices must not exceed **1.5 A**.

2.3 Selecting the output voltage 5 V / 9 V

The output is factory-set to **5 V**. For an output voltage of **9 V**, bridge the two pads marked **9V** on the top side of the board with solder (① in the figure in Chapter 2.1). To return to 5 V, remove the solder bridge, for example with a desoldering pump or desoldering wick.



Bridged 9V pad – 9 V output

※ With a 9 V output the input voltage must be higher than 10 V. Before switching to 9 V, make sure all connected loads can withstand 9 V – otherwise they may be destroyed.

2.4 Powering from Li-Po batteries

What matters is always the actual battery voltage throughout use – from full charge until the end of the flight. For Li-Po, fully charged is 4.20 V/cell and the end of flight is 3.5 V/cell; for LiHV, fully charged is 4.35 V/cell. This gives:

Battery	Fully charged	End flight	5 V output	9 V output
2S Li-Po	8.4 V	7.0 V	yes	no
3S Li-Po	12.6 V	10.5 V	yes	yes
4S Li-Po	16.8 V	14.0 V	yes	yes
5S Li-Po	21.0 V	17.5 V	yes	yes
6S Li-Po	25.2 V	21.0 V	yes	yes
7S Li-Po	29.4 V	24.5 V	yes	yes
7S LiHV	30.45 V	24.5 V	no	no

A fully charged 7S LiHV battery (30.45 V) exceeds the maximum input voltage of 30 V – do not use the module with it. With 7S Li-Po the margin up to 30 V is small; allow for voltage spikes on the model's power wiring.

2.5 Load and protection functions

- The continuous output current is **1.5 A**. For short periods the module can deliver up to **2.5 A**, for no more than 5 s per minute.

- **Overcurrent protection (OCP)** works in hiccup mode: when overloaded, the module repeatedly switches the output off and tries to restart for as long as the overload lasts.
- **Thermal shutdown** disconnects the output if the module overheats. Provide airflow around the module and do not wrap it in heat-insulating materials beyond thin heat-shrink tubing.
- The module tolerates an output short circuit for no more than 5 s per minute. The protection functions are not intended for continuous operation under overload – always remove the cause.

2.6 Safety rules

- Solder and change the wiring only with the power disconnected.
- Observe the input polarity. The manufacturer does not specify reverse polarity protection – reversing the polarity may destroy the module.
- Do not exceed the input voltage of 30 V or the continuous current of 1.5 A.
- Protect the module from moisture, water, conductive dust and contact with metal or carbon parts.
- After soldering, check that no solder bridge has formed between adjacent pads (except the intentionally bridged 9V pad).
- The module is a small part – keep it out of the reach of children.

2.7 Troubleshooting

Problem	Cause and solution
No voltage at the output	Check the voltage and polarity at the 6-30V IN input and the quality of the solder joints. Disconnect the load – if the output recovers, the current draw is too high or there is a short circuit at the output.
Output cyclically switches off and on	Overcurrent protection (hiccup) has tripped. Reduce the load below 1.5 A and check for a short circuit at the output.
Output drops out after longer operation	Thermal shutdown – the load is close to the limit or the module is not cooled sufficiently.
Output is 5 V instead of 9 V	The 9V pad is not bridged or the joint is poor – re-solder it.
9 V output drops or fluctuates	The input voltage is lower than 10 V (e.g. a 2S battery or a discharged 3S battery).

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 Product conformity

CE

- The product bears the **CE** marking and complies with the requirements of the applicable European Union harmonisation legislation.
- A copy of the **EU Declaration of Conformity** is available from the importer at the address stated above or at the e-mail address info@rotorama.cz.
- **Product identification:** type designation (Matek Micro BEC 6-30V to 5V/9V-ADJ); the module board bears the manufacturer's MATEKSYS marking and the pin labels.

3.3 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.