



Talon 40A

Skystars · electronic speed controller (ESC) 40 A, 3-6S
AM32 firmware · user manual



Read this entire manual carefully before installation and first use, especially the safety instructions in Chapter 2.

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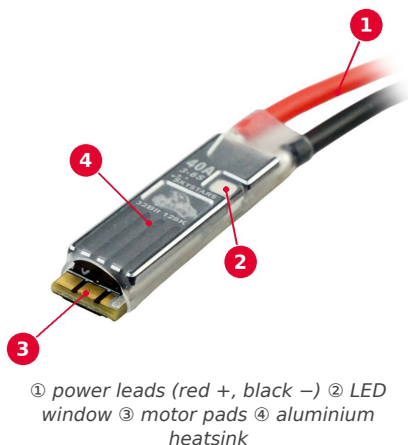
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1. Product description

1.1 What it is for

Skystars Talon 40A 3-6S AM32 is a single electronic speed controller (ESC) for one brushless motor. It is used in freestyle quadcopters and other multicopters with individual ESCs on the arms, as well as in airplanes. The ESC has a *slim* design – narrow and long – so it fits even on frames with narrower arms.

The ESC is powered from a 3S to 6S Li-Po battery and handles a continuous current of up to 40 A. It runs **AM32** firmware, which supports ESC telemetry and allows a wide range of parameters to be set. The ESC has an integrated LED and an aluminium heatsink. It has no voltage regulator (BEC) and no current sensor.



1.2 Specifications and package contents

Product designation	Skystars Talon 40A 3-6S AM32
Type	single electronic speed controller (ESC) for 1 brushless motor
Input	3–6S Li-Po
Continuous current	40 A
Firmware	AM32
ESC telemetry	yes
BEC	no
Current sensor	no
LED	integrated, colour adjustable
Cooling	aluminium heatsink

Dimensions	9 × 37.5 × 5.8 mm
Weight	6.8 g
Package contents	1× ESC
Not included	motor, connectors (power or motor), capacitor, flight controller (FC), programming adapter

2. Safety instructions

- The ESC is intended to be installed in a model by a person who is skilled in soldering and wiring model electronics. It is not a toy – keep it out of the reach of children.
- Power it only from a **3S to 6S** Li-Po battery. The voltage of a fully charged 6S Li-Po battery ($6 \times 4.20 \text{ V} = 25.2 \text{ V}$) is the highest voltage the ESC may be connected to.
- **Disconnect the battery** before any soldering and before handling the wiring.
- **Observe the power polarity.** Reversing + and – destroys the ESC instantly; such damage is not a product defect.
- When connecting the battery for the first time, use short-circuit protection (a so-called smoke stopper) or a bench power supply with current limiting.
- **Never have propellers fitted during bench tests.** The motor may start unexpectedly – for example on Arm (motors enabled) or while settings are being changed in the configuration software.
- The heatsink gets hot during operation. Do not touch it immediately after a flight and do not cover it – the ESC needs airflow.
- Protect the ESC from moisture, dust and metal chips (especially carbon dust from the frame). Do not connect a wet or dirty ESC to the battery.
- Do not continue to use an ESC that is mechanically damaged or that has emitted smoke or a burning smell.

3. Installation and wiring

3.1 Before installation

- The ESC is supplied without connectors – the motor and the power supply are connected by soldering.
- Check that the motor, propeller and battery match the ESC ratings: 3-6S Li-Po input and a continuous current of no more than 40 A. The current draw of the motor with a given propeller can be found in the motor manufacturer's data.
- Prepare a flight controller (FC) with a motor output and, if needed, a free UART input for ESC telemetry.

3.2 Wiring

- ① **Power:** connect the red lead to the positive pole (+) and the black lead to the negative pole (–) of the power distribution or the battery connector.
- ② **Motor:** solder the three motor wires to the three pads at the end of the ESC. The order of the wires only determines the direction of rotation of the motor – it can be changed later in the settings (Chapter 4.3).
- ③ **Signal:** connect the signal input of the ESC to the motor output of the flight controller (FC) and the ground (GND) of the ESC to the ground of the FC. Follow the pad markings on the ESC board.
- ④ **Telemetry (optional):** connect the ESC telemetry output to the RX input of a free UART port of the flight controller.

✳ **Especially with a 6S supply we recommend soldering a low-ESR capacitor to the power leads as close to the ESC as possible. It dampens voltage spikes that could damage the ESC.**

3.3 Mounting and cooling

- Fix the ESC to the frame arm with a cable tie so that it cannot move and so that the tie does not press on the pads or solder joints.
- Place an insulating pad between the ESC and a carbon frame, or leave it in its original heat-shrink sleeve – carbon is electrically conductive.
- Leave the heatsink uncovered and exposed to the airflow from the propeller.
- Route the wires so that they cannot get into the propeller and do not chafe against the edges of the frame.

4. Settings and AM32 firmware

4.1 Control signal and telemetry

According to the AM32 project, the firmware supports the control signals **Servo PWM**, **DSHOT300** and **DSHOT600**, bidirectional DShot and ESC telemetry according to the KISS standard.

- In Betaflight, set the DShot300 or DShot600 protocol on the *Motors* tab.
- Enable bidirectional DShot (motor RPM for the RPM filter) in Betaflight with the *Bidirectional DShot* option.
- For telemetry connected via a separate wire, set the sensor input *ESC* for the relevant UART port on the *Ports* tab and enable the *ESC Sensor* feature.

4.2 Configuration and firmware update

The ESC is configured with the **AM32 Configurator** (am32.ca) in a web browser or with esc-configurator.com. The connection is made via a flight controller (FC) running Betaflight – so-called *passthrough* – or directly with a one-wire USB adapter.

- ① Remove the propellers.
- ② Connect the flight controller (FC) to the computer with a USB cable and connect the battery to the ESC.
- ③ In the configuration software, connect to the ESC, read the settings and make the changes.
- ④ Write the settings to the ESC, disconnect the battery and unplug the USB cable.

*** When updating the firmware, select only firmware intended for this ESC. Incorrect firmware may render the ESC inoperable. Do not disconnect the power while the firmware is being flashed.**

4.3 Motor direction and LED

- Change the direction of rotation of the motor with the direction setting in the AM32 configuration software, or by swapping any two motor wires.
- Check the direction of rotation without propellers on the *Motors* tab in Betaflight and compare it with the frame diagram.
- The colour of the integrated LED can be set in the configuration software.

5. Troubleshooting

Problem	Possible cause and solution
Motor does not spin, ESC does not respond	Check the polarity and the power solder joints, the signal and ground connection to the flight controller (FC) and the protocol set on the <i>Motors</i> tab.
Motor spins the wrong way	Change the direction in the AM32 configuration software or swap two motor wires (Chapter 4.3).
Motor stutters or does not start	Check the solder joints of all three motor wires and whether the motor winding is damaged.
Telemetry does not work	Check that the telemetry output is connected to the RX input of the UART port and check the UART port and <i>ESC Sensor</i> settings in Betaflight; for bidirectional DShot check the <i>Bidirectional DShot</i> option.
Configuration software does not find the ESC	Check that the battery is connected, that Betaflight is not connected to the flight controller at the same time and that the signal wire is connected.
ESC overheats	Check the current draw of the motor with the propeller and the airflow around the heatsink; the ESC must not be continuously loaded above 40 A.

6. Information for the EU and Czech Market

6.1 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

6.2 Product conformity



- 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:** the type designation (Skystars Talon 40A 3-6S) is marked on the heatsink of the ESC and on the product packaging; the AM32 firmware version is shown by the AM32 configuration software once the ESC is connected.

6.3 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>.

7. Warranty and rights arising from defective performance

7.1 Rights of the buyer under Czech law

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 6.1.
- 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.