ROTORAMA

2812 900Kv

Readytosky – brushless motor for FPV drones
User manual



Read the safety instructions in Chapter 3 before mounting and first start-up.

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

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1. Product description

1.1 What it is for

The Readytosky 2812 900Kv is a brushless outrunner motor designed for building FPV drones with 8–9″ propellers in combination with a 6S battery. The motor is sold individually; a quadcopter requires four pieces.

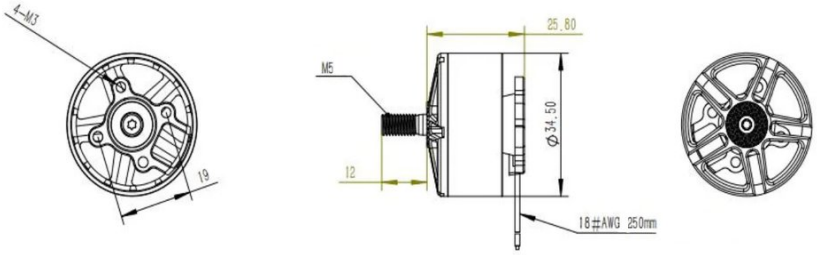
The motor features curved magnets, single-strand windings and a bell (rotor) secured to the shaft with a screw. To operate, it requires an electronic speed controller (ESC), which powers it from the drone battery and controls its speed according to commands from the flight controller (FC).



Readytosky 2812 900Kv

1.2 Specifications and package contents

Product designation	Readytosky 2812 900Kv
Type	brushless outrunner motor
Size	2812
Kv	900 rpm/V
Configuration	12N14P
Weight	82 g
Shaft	5 mm, M5 thread
Dimensions (manufacturer drawing)	Ø 34.5 mm, height 25.8 mm (without shaft)
Mounting holes	4× M3, 19 mm spacing
Lead wires	18 AWG, length 250 mm
Intended use	drones with 8–9″ propellers, 6S battery
Package contents	1× motor, 1× screw set
Not included	propellers, electronic speed controller (ESC), battery, drone frame, connectors



Manufacturer drawing – dimensions in mm

1.3 Manufacturer performance data

The manufacturer states measurements with a **9045** propeller (9″ diameter, 4.5″ pitch) powered by a 6S battery. The values are indicative – actual thrust, current and temperature depend on the propeller, battery voltage, speed controller and cooling.

Throttle [%]	Voltage [V]	Current [A]	Thrust [gf]	Speed [rpm]	Power [W]	Efficiency [gf/W]
10	25.39	1.07	153	3885	27.2	11.4
20	25.31	2.8	398.3	5714	70.9	9.4
30	25.2	5.17	668.6	7176	130.3	8.1
40	25.05	8.55	1013.8	8554	214.2	7
50	24.82	13.86	1421.3	10064	344	6
60	24.51	20.85	1829.4	11545	511	5.3
70	24.11	29.24	2293.3	12673	705	4.7
80	23.69	37.85	2672.7	13753	896.7	4.4
90	23.22	47.6	3009.1	14673	1105.3	4.1
100	23.03	49.96	3034.4	14724	1150.6	4.1

※ At full throttle the motor drew almost 50 A in the manufacturer's measurement and the motor temperature reached 62.8 °C. Choose the speed controller (ESC) and battery with a sufficient margin.

2. Use

2.1 Mounting on the frame

- The motor is attached to the frame arm with four M3 screws in holes with 19 mm spacing. Use the screws from the supplied set.
- Always check the screw length: the screw must not reach into the stator windings. A screw that is too long will damage the windings and cause a short circuit.
- After tightening, turn the bell by hand – it must rotate easily, without rubbing or catching.
- We recommend using a medium-strength threadlocker on the screws. Tighten the screws with care so as not to strip the thread in the motor base.
- Route the wires along the arm and secure them so that they cannot get into the propeller or chafe against sharp edges of the frame.

2.2 Connecting to the speed controller (ESC)

- The three motor wires are soldered to the three output pads of the electronic speed controller (ESC) for that motor. The order of the wires does not matter – it only determines the direction of rotation (Chapter 2.3).
- Shorten the wires to the required length, strip and tin the ends. Use a sufficiently powerful soldering iron so that the joint is not a “cold” joint.
- Check the finished joints: they must not touch adjacent pads or the frame. Insulate any exposed parts of the wires.
- The speed controller must be rated for the current the motor draws with your propeller (for guidance see Chapter 1.3).

2.3 Direction of rotation

The direction of rotation must match the motor position on the drone and the propeller type. If it is reversed, change it in one of these ways:

① in software, in the speed controller configuration program or in Betaflight (reversed motor direction option),

② by swapping any two motor wires on the speed controller pads.

2.4 Mounting the propeller

- The propeller is fitted onto the threaded M5 shaft and secured with a nut. Use 8–9″ propellers designed for a 5 mm shaft.
- Fit the propeller only after checking the direction of rotation, and always with the battery disconnected.
- Make sure the propeller orientation (CW / CCW) matches the direction of rotation of the motor. Tighten the nut properly.

2.5 First start-up

① Remove the propellers. Connect the drone to a computer and, in Betaflight on the *Motors* tab (or in the ESC configuration program), spin up each motor in turn at low speed.

② Check that the motor runs smoothly, without vibration or unusual noise, and that the direction of rotation matches the frame diagram.

③ Only then fit the propellers and carry out a careful first flight. After a short flight, check the motor temperature by touch – it must not be excessively hot.

3. Safety instructions

- Rotating propellers on a motor of this power can cause serious injury. Keep the battery disconnected whenever you work on the drone.
- Test motors with propellers fitted only with the drone securely fixed and out of reach of people and animals.
- The motor heats up during operation and may be hot after a flight. Let it cool down before touching it.
- Do not overload the motor with a propeller that is too large or with a higher voltage than it is designed for (6S). Overloading leads to overheating and damage to the windings and the speed controller.
- Use Li-Po batteries according to their manufacturer's instructions. A fully charged cell has 4.20 V (6S: 25.2 V); end the flight at 3.5 V per cell at the latest (6S: 21.0 V).
- The motor contains strong permanent magnets that attract metal objects and debris. Do not store it near magnetic data carriers and sensitive instruments.
- A drone built with this motor is subject to the rules for operating unmanned aircraft (Regulation (EU) 2019/947). The law of the country in which you operate the drone always prevails.
- This product is not a toy. Keep it out of the reach of children.

4. Maintenance and troubleshooting

4.1 Regular inspection

- After every flight, and especially after a crash, check that the bell rotates freely and the shaft is not bent.
- Remove sand, grass and metal debris from the gap between the bell and the stator. The magnets attract them and they can damage the windings.
- Check the tightness of the bell retaining screw, the mounting screws and the propeller nut.
- Check the wire insulation and the solder joints on the speed controller.
- Do not wash the motor with water or solvents. After flying in damp conditions, let it dry thoroughly.

4.2 Troubleshooting

Problem	Possible cause and solution
Motor spins in the wrong direction	Change the direction in the ESC settings or swap two motor wires (Chapter 2.3).
Motor stutters on start-up or does not spin	Faulty or cold solder joint, broken wire – check the joints on the ESC. Damaged speed controller.
Motor rubs or is noisy	Debris between the bell and the stator, worn bearing, mounting screw too long.
Bell has play or wobbles	Loose bell retaining screw or shaft bent in a crash.
Motor overheats	Propeller too large, damaged propeller, unsuitable ESC or flight controller (FC) settings, motor rubbing.
Drone vibrates	Bent shaft, damaged or unbalanced propeller, motor loose on the frame.

5. Information for the EU and Czech Market

The product is intended for sale throughout the European Union. Chapters 5 and 6 describe the situation under the law of the Czech Republic; however, the law of the country in which the product is operated always prevails.

5.1 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

5.2 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.

6. 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 5.1.
- 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.