TD-8120MG

Digital servo with metal gears
Readytosky · 20 kg · 4.8–6.8 V



Read this manual carefully before use and keep it for future reference.

www.rotorama.com

Contents

1. Product description

1.1 What it is for

1.2 Specifications and package contents

2. Use

2.1 Safety instructions

2.2 Connection and power supply

2.3 Control signal and travel angle

2.4 Mounting the servo and the arm

2.5 Maintenance and troubleshooting

3. Information for the EU and Czech Market

3.1 Importer and responsible person in the EU

3.2 Disposal of electrical equipment

4. Warranty and rights arising from defective performance

1. Product description

1.1 What it is for

Readytosky TD-8120MG is a powerful standard-size digital servo with metal gears. It converts the control signal from an RC receiver, a flight controller (FC) or other control electronics into precise rotation of the output shaft. It is suitable for a wide range of RC projects – control surfaces of aircraft and boats, steering of RC cars, robot mechanisms and other applications that require high torque.

The servo is controlled by a standard RC signal (PWM). With the common signal range of 1000–2000 µs, the servo arm travels through 135°; with the extended range of 500–2500 µs, through up to 270°. The servo can be powered from 4.8–6.8 V.



TD-8120MG servo: ① output shaft for the servo arm, ② mounting tabs with screw holes, ③ three-wire lead

1.2 Specifications and package contents

Product designation	Readytosky TD-8120MG
Type	digital servo
Gears	metal
Dimensions	41 × 40 × 20 mm
Weight	68 g
Supply voltage	4.8–6.8 V
Torque	17.2 kg·cm (4.8 V) 20.3 kg·cm (6 V)
Speed	≤ 0.15 s/60° (4.8 V) ≤ 0.13 s/60° (6 V)
Travel angle	135° (signal 1000–2000 µs) 270° (signal 500–2500 µs)
Cable length	30 cm
Package contents	1× servo, 1× set of plastic servo arms

※ The package does not include a receiver or flight controller, a power source (BEC, battery), pushrods or any other mounting hardware not listed in the package contents.

2. Use

2.1 Safety instructions

- The servo produces considerable force. Keep your fingers away from the arm, pushrods and driven mechanisms while power is on.
- Do not power the servo with more than **6.8 V**. Therefore do not connect it directly to a two-cell Li-Po battery (8.4 V when fully charged, i.e. 4.20 V/cell) – use a suitable voltage regulator (BEC).
- Observe the supply polarity. Reversing the wires may damage the servo or the connected electronics.
- Do not force the output shaft or the arm by hand, especially with power on – you may damage the gears.
- Do not let the servo push against a mechanical end stop for long periods. The servo overheats and draws unnecessarily high current.
- Protect the product from water, moisture, dust and excessive heat.
- Do not continue to use a servo with a damaged cable or broken gear teeth.
- This product is not a toy. Keep it out of the reach of children.
- When operating RC models, follow the regulations of the country in which you operate the model.

2.2 Connection and power supply

The servo has a 30 cm three-wire cable with brown, red and orange wires. According to the usual servo colour code, the wiring is as follows:

Wire	Function
brown	negative supply (GND, −)
red	positive supply (+), 4.8–6.8 V
orange	control signal (PWM)

- Before connecting for the first time, check the pin order of the connector on the receiver or flight controller (−, +, signal).
- Torque and speed increase with voltage – they are specified for 4.8 V and 6 V.
- When starting and under load, the servo draws considerably more current than at rest. The power source (BEC) must be adequately rated, otherwise the servo may jitter or the receiver or flight controller may reboot. If one source powers several powerful servos, allow for them being loaded at the same time.

2.3 Control signal and travel angle

The servo position is determined by the width of the control pulse. The neutral (centre) position corresponds to the middle of the signal range, usually 1500 µs.

Signal range	Travel angle
1000–2000 µs (standard)	135°
500–2500 µs (extended)	270°

- Most RC radios and servo testers work in the standard range of 1000–2000 µs – the servo then travels through 135°. This is not a fault.
- For the full 270° travel, the output signal range (channel limits) must be extended in the transmitter, the flight controller or other control device. See the manual of that device for the procedure.
- After changing the range, always check slowly that the driven mechanism does not hit an end stop at the extreme positions.

2.4 Mounting the servo and the arm

① Fasten the servo with screws through the holes in the mounting tabs. Tighten gently so that the tabs do not crack.

② Connect the servo to the control device and set the neutral position (signal in the middle of the range).

③ In the neutral position, fit an arm onto the output shaft as close as possible to the required centre position and secure it with the screw.

④ Attach the pushrod and slowly move through the full range. The mechanism must not bind or hit an end stop; fine-tune the centre and end positions in the transmitter or flight controller.

2.5 Maintenance and troubleshooting

No regular maintenance is required. Check the screws, the arm attachment, the cable and the gear backlash.

Problem	Possible cause and solution
Servo does not respond	Check connector polarity and seating, supply voltage and the signal on that channel.
Servo travels only 135°	Standard signal 1000–2000 µs. For 270°, extend the signal range to 500–2500 µs (Chapter 2.3).
Servo jitters or oscillates	Weak or unstable power supply, or interference. Use a more powerful BEC and check the wiring.
Receiver or FC reboots when the servo moves	Voltage drop due to high servo current. Use an adequately rated separate power source (BEC).
Servo buzzes and gets hot	The servo is pushing against an end stop or is overloaded. Adjust the end positions and mechanics.

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.