ROTORAMA

Seeker 3 O4 Pro

3" freestyle FPV drone 4S
DJI O4 Pro · ExpressLRS 2.4 GHz · GPS



Read the entire manual before your first flight, in particular the safety instructions and chapter 3 on the legal conditions of operation.

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1. Safety instructions

1.1 Before you start

The Seeker 3 is a high-performance FPV drone intended for **experienced pilots aged 14 and over**. It is not a toy. Improper handling may cause serious injury to persons or damage to property. Read the entire manual before your first flight and keep it for future reference.

- If you are new to FPV flying, practise the controls on a simulator first.
- Always set up, repair and connect the drone to a computer **with the propellers removed**.
- Do not fly under the influence of alcohol, drugs or medication that impairs attention, or when tired.
- Do not hand the product over to persons who have not read this manual.
- Do not make any modifications to the drone that could compromise its safe operation.

1.2 Rotating propellers and mechanical hazards

The propellers spin at very high speed and can cause deep cuts, especially to fingers and eyes.

- Connect the battery only just before the flight and disconnect it immediately after landing.
- After connecting the battery, do not approach the drone and keep it away from your face.
- Never hold the drone in your hand in Arm mode (motors on) and never reach into the propeller area.
- After an impact or crash, switch the drone to Disarm (motors off) immediately before approaching it.
- Always replace a damaged or cracked propeller; do not repair it.
- The motors heat up during flight. Do not touch them after landing until they have cooled down.

1.3 Li-Po and LiHV batteries

The drone is powered by a four-cell Li-Po battery (4S), which is not included. Li-Po batteries store a large amount of energy and present a fire risk if handled incorrectly.

- Charge only with a charger designed for Li-Po / LiHV batteries, with cell balancing switched on and under supervision.
- Charge on a non-flammable surface or in a protective bag, away from flammable objects.

- Do not use a battery with swollen, cracked or damaged cells or with damaged cables.
- Do not discharge the battery below 3.5 V per cell (14.0 V for 4S).
- After a crash, place the battery in a safe, non-flammable spot and watch it for at least 30 minutes to see whether it heats up or swells.
- Do not short-circuit or puncture the battery and do not expose it to high temperatures or to direct sunlight in a closed car.

1.4 Operating environment

- Fly only in good visibility, never in rain, snow, fog or strong wind. The drone is not waterproof.
- Fly in open spaces far away from people, animals, buildings, vehicles and power lines.
- Do not fly near airports or in prohibited or restricted zones (see chapter 3).
- Respect the privacy of others and do not film people without their consent.

2. Product description

The DeepSpace Seeker 3 is a compact 3" freestyle FPV drone for 4S batteries with **DJI O4 Pro** digital video transmission (DJI O4 Air Unit Pro), an ExpressLRS 2.4 GHz receiver and a GPS module. It is supplied assembled and set up at the factory.

❊ The manufacturer supplies the Seeker 3 in several production series that differ in frame design, fitted flight controller and ESCs. This manual applies to all series; the specific electronics in your unit may differ from the photos.

2.1 Package contents

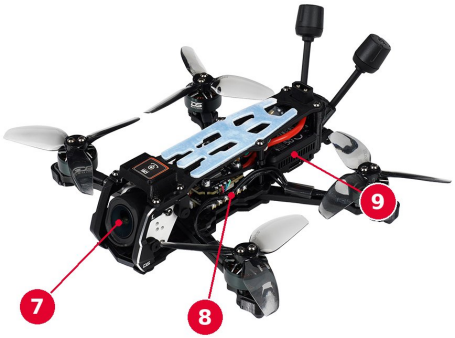
- 1× Seeker 3 drone with propellers fitted
- 1× spare set of HQ T3×3×3 propellers
- 2× battery strap
- 1× accessory bag

The battery, charger, radio transmitter and FPV goggles **are not included**.

2.2 Parts description



Top view



Front side view

No.	Part
①	GPS module (located at the front above the camera)
②	Battery platform with anti-slip pad and strap slots
③	XT30 battery connector, firmly mounted at the rear of the frame
④	DJI O4 Pro antennas (2×)
⑤	ExpressLRS receiver antenna
⑥	Aether 1505 motor with propeller (4×)
⑦	DJI O4 Pro camera in a protective cage with aluminium side plates
⑧	Flight controller (FC) with USB-C port
⑨	DJI O4 Pro transmission module (link button, linking status indicator, USB-C, microSD slot)

2.3 Technical specifications

Parameter	Value
Type	3" freestyle FPV drone
Wheelbase	139–140 mm depending on frame version
Motors	Aether 1505, 4000 KV
Propellers	HQ T3×3×3 (screwed to the motor)
Flight controller (FC)	F722 processor, ICM42688-P gyroscope
Blackbox memory	16 MB
ESCs	40 A, BLHeli_32 or AM32 firmware depending on production series
FC firmware	Betaflight
Receiver	ExpressLRS 2.4 GHz
GPS	module with 10th-generation chip (M10)
Video transmission	DJI O4 Air Unit Pro
Camera	1/1.3" CMOS sensor, 155° field of view, recording up to 4K/120 fps
Video transmission bands	5.170–5.250 GHz and 5.725–5.850 GHz
Transmitter power (CE)	5.1 GHz: < 23 dBm e.i.r.p. 5.8 GHz: < 14 dBm e.i.r.p.
Recording storage	4 GB internal + microSD card up to 512 GB
Battery	4S Li-Po, recommended capacity 650–1100 mAh
Max. battery dimensions	72 × 26 × 33 mm
Battery connector	XT30

The weight of the drone without battery varies by production series. The manufacturer states that a take-off weight below 250 g can be achieved with a light battery. Always verify the actual weight by weighing (see chapter 3.2).

2.4 Flight controller (FC) and receiver

The flight controller (FC) with the F722 processor forms a single unit (stack) together with the ESCs. It runs **Betaflight** firmware, which is configured with Betaflight Configurator via the USB-C port on the flight controller ⑧. The 16 MB memory records flight data (blackbox) for tuning.

The **ExpressLRS 2.4 GHz** receiver is connected to the flight controller. To control the drone you need a radio transmitter with an ExpressLRS 2.4 GHz transmitter module running the same major firmware version (see chapter 5.2).

2.5 DJI O4 Pro video transmission

The image from the camera ⑦ is transmitted digitally by the DJI O4 Pro transmission module ⑨ to DJI goggles. According to DJI, compatible goggles are **DJI Goggles 3**, **DJI Goggles N3**, **DJI Goggles 2** and **DJI Goggles Integra**. At the same time, the video is recorded in high quality to a microSD card in the slot of the transmission module. The flight controller overlays OSD data on the image (battery voltage, GPS data etc.).

- DeepSpace activates the DJI O4 Pro unit before shipping. A non-activated unit transmits at no more than 20 mW and the goggles menu cannot be operated; activation is done with DJI Assistant 2 and a DJI account.
- Do not cover, bend or twist the antennas ④ – this reduces the transmission range.
- The transmission module heats up during operation. On the ground it runs in low-power mode, and being switched on for a long time without airflow may cause overheating. Do not touch it until it has cooled down.
- Recording to the microSD card does not start on the ground before take-off. Do not remove the card or switch off the drone while recording – the file would be corrupted.

3. Legal conditions of operation in the Czech Republic and the EU

3.1 The law of the country where you fly applies

Regulations (EU) 2019/947 and 2019/945 apply in all member states of the European Union, but national implementing rules differ from country to country – registration portals, minimum pilot age, geographical zones, mandatory insurance, permitted frequency bands and maximum transmitting power. The information in this chapter describes the situation in the Czech Republic. If you operate the drone in another country, you must follow the rules of the country in which you fly.

3.2 Drone classification and operating category

The Seeker 3 **does not have a C0–C4 class marking** under Regulation (EU) 2019/945. In the open category under Regulation (EU) 2019/947 it is operated as a privately built unmanned aircraft system. The subcategory depends on the actual take-off mass (MTOM) including the battery and all accessories:

- **MTOM below 250 g** and maximum operating speed below 19 m/s – subcategory **A1**.
- In all other cases – subcategory **A3** only.
- Subcategory A2 is not available for a drone without a class marking.

※ Check whether the take-off mass stays below 250 g by weighing the drone with the battery you actually use. With a 4S battery the drone may exceed the 250 g limit.

3.3 Operator registration and pilot competence

- The drone is equipped with a camera, so its **operator must register** with the Civil Aviation Authority (ÚCL), even if it weighs less than 250 g. The operator registration number must be visibly displayed on the drone.
- Registration is done online on the ÚCL portal dron.caa.gov.cz.
- In subcategory A1 with a drone below 250 g, the pilot must be familiar with this manual; no online test is required.
- In subcategory A3, the pilot must complete the online training and online test with the ÚCL.

3.4 Operating limits of the open category

- The maximum flight height is **120 m** above the ground.
- The drone must remain within visual line of sight (VLOS) of the pilot or observer throughout the flight.
- Never fly over assemblies of people.

- In subcategory A3, fly at least 150 m away from residential, commercial, industrial and recreational areas and in a way that does not endanger uninvolved persons.
- Respect geographical zones – the current map is available at dronemap.gov.cz.

3.5 Flying with FPV goggles

When flying with FPV goggles, the pilot cannot see the drone directly. An **unmanned aircraft observer** must therefore stand next to the pilot, watch the drone with the naked eye without optical aids and warn the pilot of any danger in time.

3.6 Radio frequencies and transmitting power

The drone contains radio equipment: an ExpressLRS 2.4 GHz receiver and the DJI O4 Pro video transmission system. **The user is responsible** for ensuring that their operation, including the selected frequency band and transmitting power, complies with the regulations of the country in which you fly.

3.7 Privacy and insurance

- The drone camera may capture personal data. Do not record people without their consent and observe data protection rules (GDPR).
- In subcategory A1 and in subcategory A3 up to 4 kg, liability insurance is not mandatory in the Czech Republic. We nevertheless recommend taking it out.

4. Preparing for the first flight

4.1 What else you need

- a 4S Li-Po battery with an XT30 connector, capacity 650–1100 mAh, dimensions no more than 72 × 26 × 33 mm,
- a balancing charger for Li-Po batteries,
- a radio transmitter with an ExpressLRS 2.4 GHz module,
- DJI Goggles 3, Goggles N3, Goggles 2 or Goggles Integra,
- a microSD card for video recording (recommended),
- a computer with Betaflight Configurator and a USB-C data cable,
- a screwdriver and wrench for changing propellers.

4.2 Choosing and connecting the battery

Always fit a **fully charged** battery before flight. 4S battery voltages:

State	Li-Po	LiHV
Fully charged	4.20 V/cell (16.8 V)	4.35 V/cell (17.4 V)
End flight	3.5 V/cell (14.0 V)	3.5 V/cell (14.0 V)
Storage	3.8 V/cell (15.2 V)	3.8 V/cell (15.2 V)

- Place the battery on the platform ② on top of the frame with the cable facing backwards.
- Thread both straps through and tighten the battery firmly. It must not shift during flight.
- Make sure the battery cable cannot reach the propellers.
- Switch on the radio transmitter first and only then connect the battery to the XT30 connector ③.

A heavier battery increases the take-off mass. If you want to stay below the 250 g limit, choose a light battery and weigh the drone with it.

4.3 Fitting the propellers

The HQ T3×3×3 propellers are attached to the motors with screws. Each motor rotates in a defined direction and carries a propeller of the matching rotation direction.

- When replacing a propeller, fit a new one with the same rotation direction as the original propeller on the same motor.
- The leading (rounded) edge of the blade must face forward in the direction of motor rotation. Do not fit the propeller upside down.
- Tighten the screws evenly and gently. Overtightened screws may damage the propeller or the motor.

- You can check the motor rotation direction in Betaflight Configurator on the *Motors* tab (see chapter 5.5).

4.4 GPS module

The GPS module ① is located at the front of the drone to minimise interference. After the battery is connected, the module needs some time to find satellites. It finds them fastest outdoors under open sky, away from buildings and trees. The number of satellites is shown in the OSD in the goggles.

GPS data are used to display speed, distance and direction to the home point and for the return-to-home function (see chapter 5.7).

5. Setting up

※ Perform all steps in this chapter with the propellers removed.

5.1 Connecting to a computer

The drone is set up at the factory. Before the first flight, however, check the settings in **Betaflight Configurator**:

① Connect the drone to the computer with a USB-C data cable ⑧ and click *Connect* in the program.

② On the *Setup* tab, check that the drone model on the screen follows the movements of the real drone.

③ Before making any change, back up the factory settings: on the *CLI* tab, enter the command **diff all** and save the output (*Save to File*).

USB power is enough to configure the flight controller; testing the motors, receiver and video transmission requires the battery.

5.2 Binding the receiver

The ExpressLRS receiver must be bound to the transmitter module of your radio. Both must run the same major firmware version (first number of the version). Procedure according to the ExpressLRS documentation:

① Switch off the radio transmitter.

② Connect and disconnect the drone battery three times in a row; each time wait until the receiver LED lights up and disconnect within 2 seconds.

③ The receiver LED shows a quick double blink – the receiver is in binding mode (bind).

④ Switch on the radio transmitter and select *[Bind]* in the ExpressLRS (Lua) script.

⑤ Once bound, the receiver LED stays solid.

With a binding phrase set, the receiver does not enter binding mode; it binds automatically to a module with the same phrase.

The official ExpressLRS documentation is available via the QR code and at www.expresslrs.org.

5.3 Linking with DJI goggles

Procedure according to the DJI manual (example for DJI Goggles 3):

① Switch on the goggles and connect the drone battery. The linking status indicator on the transmission module ⑨ is solid red.

② Press the link button on the transmission module; the indicator blinks red.

③ Press the link button on the goggles; the goggles beep continuously.

④ Once linked, the indicator turns solid green, the goggles stop beeping and show the camera image.

The procedure may differ for other goggles – follow the manual of your DJI goggles. DJI O4 Air Unit Pro must be selected in the goggles menu (*Status*). The user is responsible for the legality of operating the video transmission (see chapter 3.6).

5.4 Accelerometer calibration

Place the drone on a flat, level surface and click *Calibrate Accelerometer* on the *Setup* tab. Do not move the drone during calibration.

5.5 Checking the motors and propellers

On the *Motors* tab, confirm the safety notice and spin each motor at low power. Check that the correct motor spins in the direction shown in the program. Only then fit the propellers (chapter 4.3).

5.6 Arm, Disarm and failsafe

Arm (motors on) and **Disarm** (motors off) are controlled by a switch on the radio transmitter, which is assigned on the *Modes* tab. Check that the switch works and that the motors stop immediately after switching to Disarm.

- Arming is only possible with the throttle at minimum and the drone at rest.
- On the *Failsafe* tab, check what the drone does on signal loss. Without a valid GPS position, the motors must stop.
- Test the failsafe without propellers: after Arm, switch off the radio transmitter – the motors must stop.

5.7 Return to home (GPS Rescue)

Betaflight can activate **GPS Rescue** mode on signal loss or via a switch; the drone then returns to the home point and descends. It is configured on the *Failsafe* tab.

- The home point is saved at the moment of Arm. Before arming, wait until the GPS module has enough satellites.
- GPS Rescue is not a guaranteed return; it may fail with a weak GPS signal, in strong wind or because of obstacles.
- Test the function first at a safe height in an open space.

5.8 Firmware update

The firmware of the flight controller (Betaflight), the ESCs (BLHeli_32 or AM32 depending on series) and the ExpressLRS receiver can be updated; afterwards, the receiver and transmitter module must run the same major ExpressLRS version. The firmware of the DJI O4 Pro and the goggles is updated with DJI Assistant 2 via the USB-C port of the transmission module; all DJI devices should have the latest firmware before linking.

- Before updating the FC firmware, save a backup of the settings (command **diff all**, see chapter 5.1).

6. Flying

6.1 Pre-flight check

- The battery is **fully charged**, undamaged and firmly secured with the straps.
- The propellers are intact, correctly fitted and the screws are tight.
- The frame, arms and antennas are free of cracks and nothing is loose.
- The radio transmitter is on, the Arm switch is in the Disarm position and the throttle is at minimum.
- The image in the goggles is clear, the OSD shows the battery voltage and a microSD card is inserted.
- Before Arm, the GPS module has enough satellites (if you want to use GPS Rescue).
- The flight area is clear and the observer is standing next to you (see chapter 3.5).

6.2 Take-off and basic control

Place the drone on a flat surface at least 3 m away from yourself and other people. Switch to Arm, add throttle smoothly and take off. Make your first flights in a calm mode at low speed until you get used to the drone. After landing, switch to Disarm immediately and only then disconnect the battery.

6.3 Monitoring the voltage and ending the flight

Watch the battery voltage in the OSD during flight. Under load, the voltage drops more than at rest. End the flight no later than when it drops to **3.5 V per cell (14.0 V)**. Deeper discharge damages the battery and shortens its service life.

6.4 Finding the drone after a crash

- Remember or note the last position of the drone. The OSD can display the distance and direction to the home point.
- If the drone crashes out of sight, switch to Disarm immediately.
- Once you have found it, disconnect the battery first and check its condition (see chapter 1.3).

7. Maintenance and troubleshooting

7.1 After every flight

- Disconnect the battery and let the motors and electronics cool down.
- Check the propellers, arms, antennas, cables and that the screws are tight.
- Remove grass, sand and dirt from the motors and frame.
- Do not leave the battery fully charged for longer than one or two days.

7.2 Replacing the propellers

Replace a propeller whenever it is bent, chipped or cracked. Loosen the screws, remove the old propeller and fit the new one according to chapter 4.3. Use HQ T3×3×3 propellers or propellers of the same size with the same mounting method.

7.3 Replacing a motor

Replace a damaged motor with a motor of the same type (Aether 1505, 4000 KV). The replacement requires soldering the wires to the ESC. If you are not experienced in soldering, have the replacement done by a service centre. After replacement, check the rotation direction on the *Motors* tab (chapter 5.5).

7.4 Storage

- Store the drone in a dry place at room temperature, out of the reach of children.
- Store the battery disconnected, charged to the storage voltage of **3.8 V per cell (15.2 V)**, in a protective bag in a non-flammable place.

7.5 Troubleshooting

Problem	Possible cause and solution
The drone cannot be armed	The throttle is not at minimum, the drone is not level or there is no signal from the radio. The cause is shown on the *Setup* tab (Arming Disable Flags) or in the OSD.
The receiver does not respond to the radio	The receiver is not bound or runs a different major firmware version than the transmitter module. Bind it according to chapter 5.2.
No image in the goggles	The goggles are not linked, or DJI O4 Air Unit Pro is not selected in the *Status* menu. Link them according to chapter 5.3; check the antennas.
The goggles report overheating	The transmission module has been running on the ground for a long time without airflow. Disconnect the battery and let it cool down.
GPS does not find satellites	The module needs open sky and time. Move away from buildings and trees and wait. Check the module cable.
The drone flips over on take-off	The propellers are fitted upside down or on the wrong motor, or the motor order or direction is incorrect. Check chapters 4.3 and 5.5.
The drone vibrates or shakes	Damaged propeller, loose screw or bent motor shaft. Replace the faulty part.
Short flight time	The battery is worn, not fully charged or has a low capacity. Use a charged battery in good condition.

8. Information for the EU and Czech Market

8.1 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

8.2 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:** the type designation (DeepSpace Seeker 3) is given on the product packaging.

8.3 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.

9. 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 8.1.
- 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.