

Parachute and Circuit Breaker System DJI MATRICE 300 RTK



Read this manual carefully before handling the parachute system.

PRESENTATION

Flying Eye is your partner in drone technology since 2009. We develop parachute systems since the appearance of the drone regulation in 2012. Pyrotechnic system issued from aviation technology, you have the most efficient and lightest system on the market.

Flying Eye could not be held responsible for any malfunction or inefficient operation.

We are at your disposal for any technical or commercial information.

Translated with www.DeepL.com/Translator (free version)

WARNINGS AND PRECAUTIONS FOR USE

Flying Eye may suspend the warranty and disclaim any liability to anyone who fails to observe the basic safety precautions set forth below. Flying Eye is not responsible for any damage or injury directly or indirectly related to the use of the fireworks or by the use of fireworks that do not meet the safety requirements and standards.

- No other operation is permitted other than that specified in the manual.
- The device should only be used by (or under the supervision of) a responsible adult. Always keep the device out of the reach of children. Do not let them play with it.
- Under no circumstances should you disassemble any part of the device, except during scheduled maintenance and in accordance with the instructions in this manual.
- Do not place the device in a damp or wet environment and keep it away from UV light.
- Do not expose the system to low or high temperatures, strong shocks, contact with chemicals, acids, or long-term storage in a humid or dusty environment. Incorrect use may cause the pyrotechnic cartridges to explode and put your life in danger. The maximum temperature of use is 40°C and the minimum temperature of use is -15°C.
- The good condition of the parachute system must be checked before each use. Do not use the device if it is damaged or malfunctioning. If this is the case, contact your dealer.
- The parachute cannot prevent the drone from malfunctioning.
- Any flight with a drone implies the existence of a risk for the equipment and people in the vicinity, with or without a parachute.
- The use of a parachute should not increase your risk.
- The parachute must be activated manually by the user. Regular training is necessary to be able to react correctly in an emergency. Therefore, for the safety of the equipment and third parties, practice dummy releases on the ground regularly.
- The ejection system works only once. It must be returned to your dealer to be recharged.

TECHNICAL DESCRIPTION



DESCRIPTION :

Reliable and lightweight safety system for S2 and S3 certification of the DJI MATRICE 300 RTK. It includes an ultra fast double parachute, a circuit breaker, an alarm and a secure radio trigger that is attached to the pilot's radio control. The parachutes are removable in a few seconds. The center of gravity of the Matrice 300 RTK is maintained. Redundant parachutes for a totally infallible system. The MATRICE 300 RTK lands on its feet, when the parachutes are released, to avoid breaking

of an arm or a landing gear. Works correctly from 15 meters

high thanks to the pyrotechnic technology borrowed from ULM. Very low air penetration coefficient allowing to generate no vibration at high speed and thus keep a perfectly stable image.

Reliable, robust and light high-tech materials.

The assembly and disassembly of the system can be done by the customer. The system does not modify the integrity of the DJI MATRICE 300 RTK. The DJI manufacturer's warranty is retained. Fits in the original case of the Matrix 300 RTK.

TECHNICAL SPECIALIZATIONS :

- Weight of the complete system: 710g
- - Impact energy: 64 Joules
- - Approved for 8kg
- - Redundancy of the power cut electronics
- - Double trigger button on the remote control
- - Encrypted frames (256 bits) - checksum to authenticate the frame. Association in both directions.
- - Logs on micro-sd card in the remote control (text file readable by the user and not alterable containing: date/hour/min/sec, quality of reception, triggering requested by the user, triggering received by the receiver, acknowledgement of receipt of the remote control, battery voltage drone, voltage and current through the 2 circuit breaker chips, and battery voltage remote control)
- - 40 hours remote control autonomy (1800mAh lipo battery rechargeable by micro-USB)
- - Auto power Off (after 30 minutes without connection)
- - Battery voltage display on the remote control (4 LEDs / or directly on the lcd V1.05)
- - Emergency power supply to trigger the parachutes up to 1 minute after a loss of power of the drone
- - Firmware update via micro-USB
- - Secure remote control power on and off (like a DJI battery)
- - Possibility to pair up to 4 remotes per drone



CONTENTS:

- 2 parachute containers
- 1 left spacer module
- 1 right spacer module
- 1 cradle (landing gear support)
- 2 load caps
- 2 pyrotechnic charges
- 1 remote control
- 1 micro USB cable
- 1 battery lock
- 1 safety pin



RADIO CONTROL PARACHUTE



Charge level of the radio control :

To check the charge level, press the "POWER" button once, the indicator lights will appear.
On version 1.05 (with lcd screen), you will see the battery level on the screen directly.

Switching on :

To switch on the radio control parachute, press and hold the "POWER" button.
"POWER" BUTTON. The left indicator light is green, the first indicator light on the right is red and goes out when the radio control is paired with the internal receiver of the drone.

Triggering :

The release of the parachute is done by pressing the 2 buttons "FIRE" simultaneously.





Led 1	Led 2	Led 3	Led 4	
				Radio control disconnected
				User-triggered system
				Communication error between circuit breakers
				Safety pin in place
				System failure: contact Flying Eye
				Absence of pyrotechnic charge
				Good functioning

- On
- Off
- Flashing light

Version 1.05 (with LCD screen) :



Operational system



Loss of connection with the drone



Safety pin in place



Missing pyrotechnic charge



Triggering the system

RADIO CONTROL PARACHUTE ASSEMBLY

OPERATING MODE :

Open the cover of the 4G dongle
Unscrew the two screws fixing the ring (red arrow)



Remove the ring and position it on the para-drop remote control, then screw it on

Position the parachute remote control on the SmartController

Close the cover of the 4G dongle



INSTALLATION

Installation of the parachute cradle :

In order to position the parachutes on the drone you must:

Unscrew the two landing gear supports

Position the cradle in place under the drone. Fix it with the 4 screws on each side (USB connector towards the front)



Installation of the battery throttle :

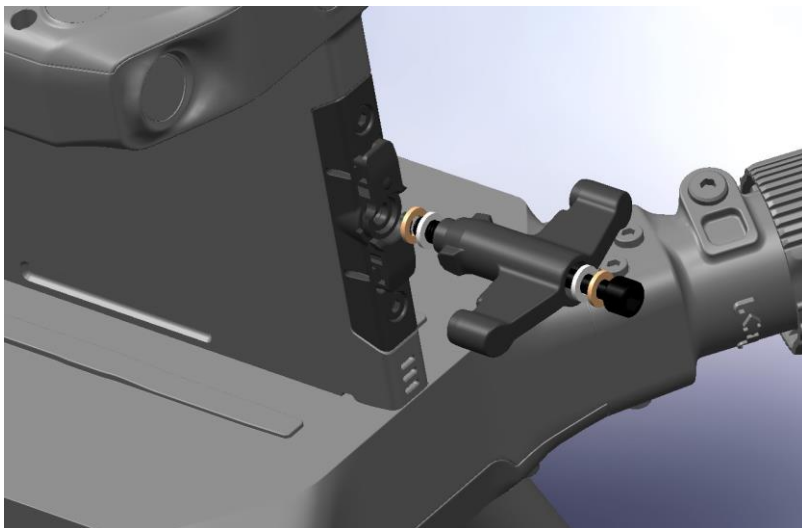
In order to be able to lock the batteries with the presence of the circuit breakers, it is necessary to change the battery locking butterfly.

Place adhesive tape on each side of the push button under the butterfly to hold it in place during disassembly.

Unscrew the central screw of the throttle: BE CAREFUL with the washers, remove the screw and the throttle.

Replace the screw in the new butterfly, washers and screw.

Remove the adhesive tape.



Installation of pyrotechnic charges :

➔ **Insert the safety pin! (as below)**

Before putting in place the "parachute" containers, please put in place the two pyrotechnic charges on each side of the drone on the provided places (landing gear base, red connector). Place the charge well thanks to the two side lugs..



Installation of the circuit breaker modules :

To place the fuse modules on each side in the battery slots, slide them forward from the back.

Slide the modules all the way forward until they stop to ensure a good connection to the connector. The circuit breaker modules can remain in place for storage in the M300 RTK case.

***Installation of the parachute pods:***

Install the two "parachute" pods on each side of the drone by capping the pyrotechnic charges and screw them down.

***Drone battery installation:***

Install the two TB60 batteries as normal by sliding them in from the back, then lock them in place with the "butterfly" type rotary fastener.

FUNCTIONAL TEST

Before each flight, you must check all the components of the system and verify its integrity. If any anomaly is found, do not proceed with the flight and contact your dealer.

Test of correct operation on the ground:

- Make sure the entire drone system is powered down. TB60 battery disengaged.
- Remove the "parachute" pods by unscrewing them.
- Remove the 2 pyrotechnic charges.
- Put in place the 2 test leds in place of the charges
- Put in place the 2 TB60 batteries and lock.
- Switch on the radio control of the drone.
- Switch on the radio control "parachute".
- Switch on the drone, the led 4 of the radio control "parachute" goes out.
- Remove the safety pin, the led 1 goes out.
- Switch on the drone motors.
- Activate the "parachute" system by pressing the 2 "FIRE" buttons:
- The four motors stop. The 110dB buzzer sounds.

The four red lights of the radio control "parachute" flash or the symbol appears on the version 1.05 (lcd screen).

The two test leds light up for 2 seconds in red or green.

- The buzzer continues to sound as long as the TB60 batteries are in place (allows you to find your drone).
- Unlock and remove the TB60 batteries:

The system will remain powered for about a minute and the buzzer will stop.

- Turn off both radio controls.



Safety pin in place

MAINTENANCE

ANNUAL MAINTENANCE

Change of pyrotechnic charges.

Airing of the canopy for 24 hours, inspection of the canopy, lines and folding. For an optimal functioning of the system, the annual maintenance of the canopy is essential.

STORAGE AND WARRANTY

SPECIFIC MAINTENANCE :

You must dry the glider immediately after any contact with moisture or water to avoid any deterioration.

Contact with solvents, chemicals, or fuel may alter the mechanical properties of the canopy.

The canopy and lines should be cleaned only with soap-free water and then dried.

WARRANTY :

We guarantee our parachutes for one year from the date of purchase against any defects in design or workmanship that may occur during normal use of the product.

Any abuse or incorrect use, any exposure to aggressive factors (high humidity, high temperature...) that would lead to damage will invalidate this warranty.



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