Dronavia

MADE IN FRANCE

USER'S MANUAL & INSTRUCTIONS

C5 CONVERSION KIT (PARACHUTE RECOVERY SYSTEM & FLIGHT TERMINATION SYSTEM) FOR DJI MAVIC 3

PRS-FTS-MOC KRONOS AD MAVIC 3 (C5)

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SUMMARY

Kronos Mavic 3 C5 conversion kit

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INTRODUCTION
by our CEO

"At Dronavia, we've been developing a wide, innovative range of accessories to secure your professional drones since 2015. Based in France, we think up all our products in our design office, before bringing them to life in our workshop, with unique technological know-how.

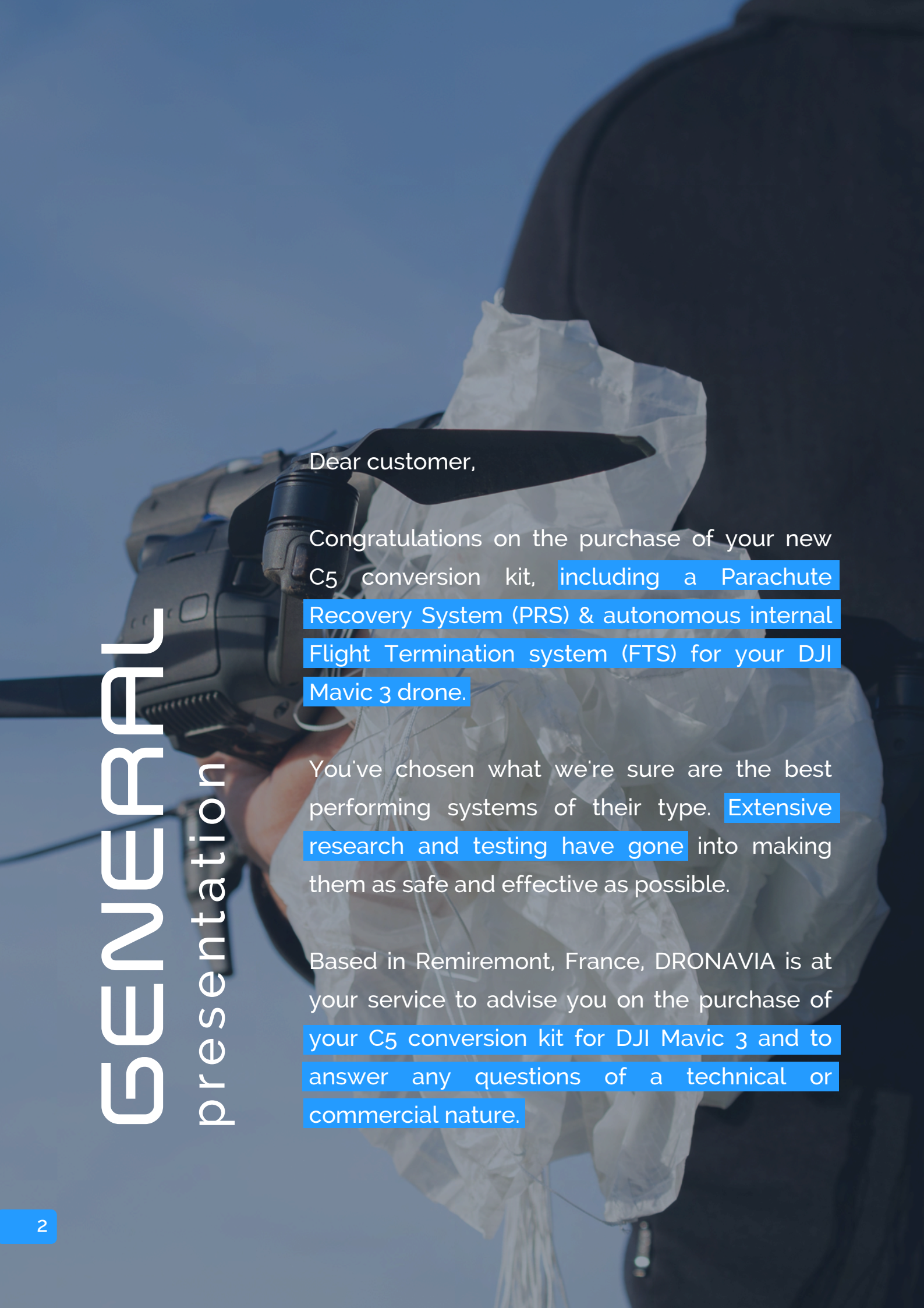
The fruit of more than 8 years of research and innovation, our new range of Kronos Parachutes Recovery Systems (PRS) and Flight Termination System (FTS) has been developed and tested in accordance with the standards imposed by the EASA and the DGAC, to make your drones compliant with C5 class label.

Thanks to its standardised safety accessories, Dronavia ensures that remote pilots have the best risk management and safety measures at their disposal during their flying missions. You'll be flying your DJI Mavic 3 in complete safety.

Thank you for your confidence & enjoy your flight!

Ludovic Pelletey, Dronavia's CEO.

GENERAL presentation



Dear customer,

Congratulations on the purchase of your new C5 conversion kit, including a Parachute Recovery System (PRS) & autonomous internal Flight Termination system (FTS) for your DJI Mavic 3 drone.

You've chosen what we're sure are the best performing systems of their type. Extensive research and testing have gone into making them as safe and effective as possible.

Based in Remiremont, France, DRONAVIA is at your service to advise you on the purchase of your C5 conversion kit for DJI Mavic 3 and to answer any questions of a technical or commercial nature.

GENERAL presentation

The Kronos PRS Mavic 3 and the Kronos internal FTS for Mavic 3 have been designed for DJI Mavic 3 aircraft with the aim of deploying as quickly as possible while keeping the sink rate to a minimum.

Multi-rotor UAVs, even when properly used and maintained, can sometimes find themselves in a critical emergency situation where immediate rescue is required, due to severe weather conditions, radio transmission failure, technical failure of the propulsion system, loss of GPS signal, and soon.

In such situations, the FTS coupled with the quick-release PRS can make the difference between a simple scare and a more serious accident. The Kronos PRS Mavic 3 and the FTS Kronos internal Mavic 3 can be activated & deployed in less than a second.

GENERAL presentation

TO BE READ CAREFULLY

These emergency devices do not protect the integrity of the equipment or prevent damage to property or persons; they are a safety feature that complements other safety features. Neither DRONAVIA nor its distributors may be held responsible for any malfunction or operation deemed insufficient or even ineffective.

CERTIFICATION by EASA

The Kronos Mavic 3 Parachute Recovery System and the Kronos Mavic 3 Flight Termination System together form an conversion kit developed to transform a C2 class drone into a C5 class drone, while meeting the requirements published by the EASA:

A class C5 UAS shall comply with the requirements defined in Part 4, except those defined in paragraphs (2) and (10) of Part 4.

In addition, it shall comply with the following requirements:

(1) be an aircraft other than a fixed-wing aircraft unless tethered;

(2) if it is equipped with a geo-awareness function, comply with paragraph (10) of Part 4

(3) during flight, provide the remote pilot with clear and concise information on the height of the UA above the surface or take-off point

(4) unless tethered, be equipped with a low-speed mode selectable by the remote pilot and limiting the ground speed to not more than 5 m/s

(5) unless tethered, provide means for the remote pilot to terminate the flight of the UA, which shall:

(a) be reliable, predictable and independent from the automatic flight control and guidance system; this applies also to the activation of this means

(b) force the descent of the UA and prevent its powered horizontal displacement; and

(c) include means to reduce the effect of the UA impact dynamics

(6) unless tethered, provide the remote pilot with means to continuously monitor the quality of the command and control link and receive an alert when it is likely that the link is going to be lost or degraded to the extent of compromising the safe conduct of the operation, and another alert when the link is lost; and

(7) in addition to the information indicated in point (15)(a) of Part 4, include in the manufacturer's instructions a description of the means to terminate the flight required in point (5).

(8) A class C5 UAS may consist in a class C3 UAS fitted with an conversion kit that ensures the conversion of the UAS C3 into a class C5 UAS. In this case, the class C5 label shall be affixed on all the accessories.

An conversion kit may only ensure conversion of a class C3 UAS that complies with point (1) and provides the necessary interfaces to the accessories.

The conversion kit shall not include changes to the software of the class C3 UAS.

The conversion kit shall be designed, and each accessory shall be identified, to ensure a complete and correct installation by a UAS operator on a class C3 UAS following the instructions provided by the manufacturer of the conversion kit.

The conversion kit may be placed on the market independently from the class C3 UAS for which they ensure the conversion. In this case, the manufacturer of the conversion kit shall place on the market a single conversion kit that shall:

(1) not alter the compliance of the class C3 UAS with the requirements of Part 4

(2) ensure compliance of the UAS fitted with the conversion kit with all additional requirements defined in this Part with the exception of point (3) above

and(3) be accompanied by manufacturer's instructions providing:

(i) the list of all class C3 UAS to which the kit can be applied

and(ii) instructions on how to install and operate the conversion kit.

EASA
European Aviation Safety Agency

CERTIFICATION by EASA

The Kronos AD Mavic 3E / 3T / 3M are drones designed and tested by Dronavia on the basis of the C2-marked DJI drones, the Mavic 3E / 3T and 3M. The information in this manual complements the original drone manual. In the event of redundancy, the information in this manual takes precedence.

Kronos AD Mavic 3E / 3T / 3M are marked C5, based on the original C2 marking of DJI Mavic 3E / 3T and 3M drones.

Modifications to the DJI Mavic 3E / 3T / 3M include the addition of a parachute system (PRS), a flight termination system independent of the flight controller (FTS), a remote control for triggering the FTS and PRS (FT link) independent of the drone's main link (C2 link), and elements to prevent serious damage to the drone in the event of parachute deployment. The C5 mark is valid only if all components are present during the flight: PRS / FTS / RC and additional components.

The original DJI drone warranty is preserved provided the drone is returned to its original condition before being sent to the DJI after-sales service. Contact your reseller for more information.

WARNINGS & precautions for use

TO BE READ CAREFULLY

Dronavia may suspend the warranty and disclaim all liability to any person who fails to comply with the basic safety instructions set out below.

Before handling the Kronos systems for Mavic 3 you must read this manual carefully. It provides information on how to use the parachute. In addition to the important notes and information mentioned in this manual, the owner of the device must comply with all the important instructions set out below.

WARNINGS & precautions for use

TO BE READ CAREFULLY

The C5 conversion kit for Mavic 3 consists of 2 safety devices which, under certain conditions, prevent the drone fitted with them from leaving its regulatory flight envelope by cutting its engines, and prevent the drone fitted with them from free-falling.

Activation of the FTS and/or PRS inevitably involves the drone falling.

This equipment does not prevent technical problems occurring on the drone. Any flight with a drone implies the existence of a danger for the equipment and people in the vicinity, regardless of the safety equipment used. Using the Kronos FTS and PRS for the DJI Mavic 3 should in no way increase your risk.

15 INSTRUCTIONS
to follow

1. It is forbidden to carry out any manipulations other than those specified in the manual.

2. 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.

3. Do not under any circumstances dismantle the various parts of the device, except when resetting it in accordance with the instructions in this manual.

4. Do not place the device in a damp or wet environment and keep it out of direct sunlight.

5. Do not expose the system to high temperatures, strong shocks, shock hazards, contact with chemicals or acids, or long-term storage in a high-humidity or dusty environment. The maximum operating temperature is 40°C and the minimum operating temperature is -5°C.

6. The condition of the Kronos parachute and FTS system for Mavic 3 should be checked before each flight. Do not use the device if it is damaged. If necessary, contact your reseller.

7. The Kronos parachute and FTS system for Mavic 3 cannot prevent the drone from malfunctioning.

8. Any flight with a drone implies the existence of a risk for equipment and people in the vicinity, with or without the Kronos safety systems for Mavic 3.

TO BE READ CAREFULLY

15 INSTRUCTIONS
to follow

9 The use of a Kronos parachute and FTS system for Mavic 3 should in no way increase your risk.

10 The Kronos parachute system for Mavic 3 attempts to prevent a malfunctioning drone from free-falling. However, there are fall situations in which the effectiveness of the Kronos parachute system for Mavic 3 may be limited or impeded.

11 The Kronos parachute and FTS system for Mavic 3 must be actively activated by the user. Regular training is necessary to be able to react correctly in an emergency.

12 The spring ejection system only works once. You can recharge the system yourself by following the instructions in this manual. It is your responsibility to ensure that the system is under warranty.

13 When reloading, it is forbidden to do so with people nearby, and especially with the barrel pointing in their direction. You must take the same precautions as when handling a loaded rifle. In the event of accidental firing during this stage or mishandling, the firing pin could be ejected and cause serious injury. Safety glasses must be worn.

14 After the device has been deployed, it is advisable to inspect each component carefully to ensure its integrity. If in doubt, contact your reseller.

15 After switching on the system, if the LED changes to a steady red, do not use it and contact your reseller for assistance.

TO BE READ CAREFULLY

LISTING

& accessories identification

PART	QUANTITY	IMAGE	C5 LABEL	DESCRIPTION
PRS	1			The Kronos Mavic 3 plug & play Parachute Recovery System for DJI Mavic 3 makes your flights safer by slowing your drone's falling speed and impact energy in the event of a problem. The parachute can be deployed automatically or manually using the Klick trigger remote control.
FTS	1			The Kronos Mavic 3 plug & play FTS, developed for the DJI Mavic 3, prevents the drone equipped with it from leaving its regulation flight envelope by cutting (manually or automatically) the drone's power supply in less than a second.
KLICK	1			The Klick trigger remote control offers a fast and secure means of remotely deployed your Kronos safety accessories (PRS / FTS). Totally independent of the drone, this lightweight, ergonomic remote control is equipped with LED status indicators and a secure wireless connection. Designed to adapt to the different uses of professional drone operators and different DJI radio controllers, the Klick trigger remote control is supplied with 3 fixing supports.
Accessories: Extending the drone's landing gear	4			DJI Mavic 3 leg extensions prevent damage to the drone during emergency landings. Drone leg extensions are quick and easy to replace.

PART	SOFTWARE VERSION	VERIFICATION METHOD	DIMENSIONS	MASS
PRS	MINI_ZEPHYR_v1.0	See "System states" on page 17	18 x 3.9 x 4.5 cm	130 G
FTS	CC_MOC_v1.2	See "System states" on page 17	9 x 5.9 x 2 cm	3 G
KLICK	Radio_MOC_v1.1	See "System states" on page 17	32 x 28 x 13 mm	20 G
Accessoires : Extension des jambes du drone	/	/	Avant : 60 x 16 x 16 mm Arrière : 51 x 40 x 27 mm	Avant : 2 G Arrière : 4 G

CONFIGURATION

of the C2/C5 conversion kit

Two flight configurations are available, depending on your flight missions and requirements. You can fly in C2 or C5 configuration. To do this, follow the instructions below in order:

1 When the C5 conversion kit is installed on the DJI Mavic 3 drone, (PRS + FTS) your drone is in C5 flight configuration.

2 If you want to fly in C2 configuration, simply uninstall the parachute system (PRS) from the DJI Mavic 3 drone.

Warning

In the case of a return for DJI after-sales service, the drone must be returned to the Dronavia workshop (or an approved reseller) so that our experts can remove the internal FTS system. Once the internal FTS has been removed, the drone reverts to class C2 status and retains the DJI warranty.

LISTING

of drones compatible with the conversion kit

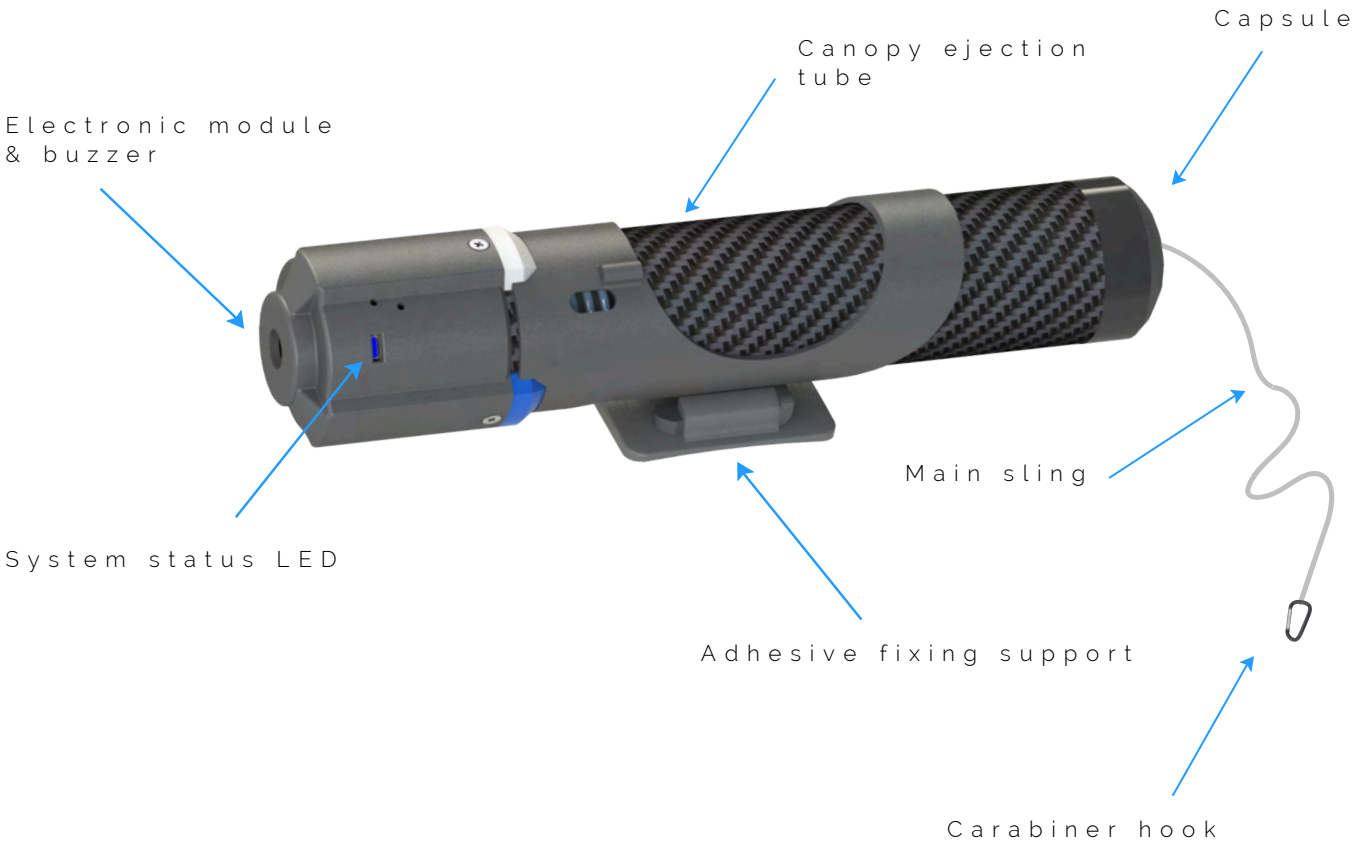
MODEL	MANUFACTURER	CONFIGURATION	TESTED SOFTWARE VERSION	ORIGINAL C3 DECLARATION OF CONFORMITY
Mavic 3 T	DJI	Any payload if the take-off weight is less than 1.15 KG, including conversion kit.	v.09.00.05.05	See appendix
Mavic 3 E	DJI	Any payload if the take-off weight is less than 1.15 KG, including conversion kit.	v.09.00.05.05	See appendix
Mavic 3 M	DJI	Any payload if the take-off weight is less than 1.15 KG, including conversion kit.	v.09.00.05.05	See appendix
Mavic 3 Pro	DJI	/	v.01.01.0500	See appendix
Mavic 3 Pro Ciné	DJI	/	v.01.01.0500	See appendix

KRONOS SYSTEMS

PARACHUTE RECOVERY SYSTEM FOR DJI MAVIC 3

COMPONENTS

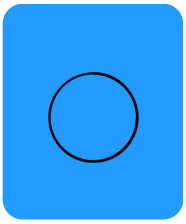
presentation



ADDITIONAL ACCESSORIES SUPPLIED

Micro USB cable

Adhesive fixing support



Fixing elastic

KRONOS MVC3

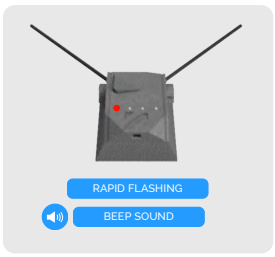
System image

KRONOS MVC3

System image

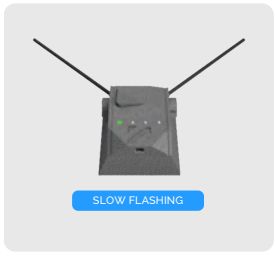
THE STATES
system

STARTING

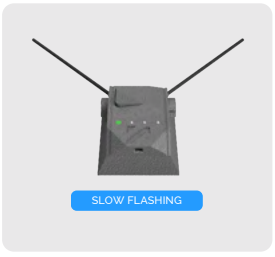


System start-up

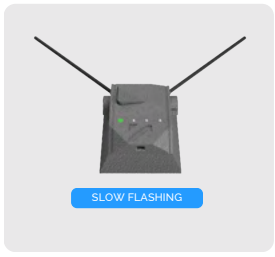
CONNECTION



FTS only connected



FTS & PRS connected

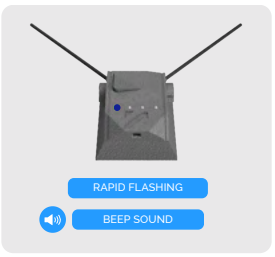


FTS & PRS connected with autonomous deployment

ACTIVATION AND DEPLOYMENT

Single FTS triggered

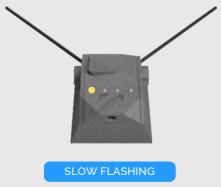
FTS triggered & PRS deployed



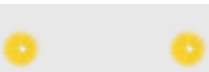
FTS triggered & PRS deployed with autonomous deployment

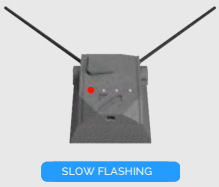
THE STATES
system

SYSTEM & BATTERY ALERTS

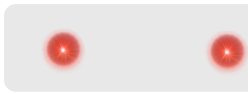


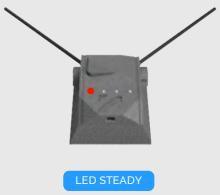
No remote control signal (Klick)





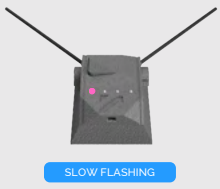
Low battery



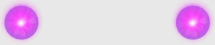


System error

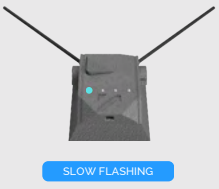
Battery charging



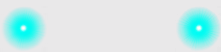
Signal scrambled



Battery charged



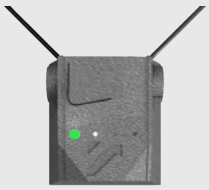
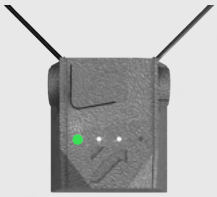
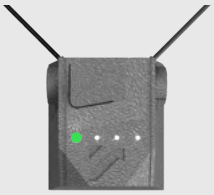
FTS not connected (Only PRS connected)



THE STATES
signal

Four indicator lights let you check the signal level between the Klick trigger remote control and the accessories kit (PRS and FTS). Signal level is defined by the number of indicators lit.

The different LED states

Lost signal	Low signal	Medium signal	High Signal
			
LED STEADY LONG BEEP	SLOW FLASHING DOUBLE SHORT BEEP	SLOW FLASHING	SLOW FLASHING

Warning

In the event of signal loss, manual deployment of the parachute system and FTS is impossible. Reduce the distance between your drone and your Klick trigger remote control.

KRONOS MVC3

system figures

KRONOS MVC3

Technical specifications

TOTAL WEIGHT	130 GRAMMES
EJECTION DEVICE	SPRING PRESTRESSED
MINIMUM HEIGHT EFFICIENCY	FROM 20 METERS
COMMUNICATION WIRELESS RADIO	SRD860 WITH ENCRYPTED KEY (869 MHZ / 100 MW)
RANGE OF THE KLICK REMOTE CONTROL	1500 METERS*
PARACHUTE AUTONOMY	10 HOURS
KLICK REMOTE CONTROL AUTONOMY	30 HOURS
ENERGY GROUND IMPACT	< 4 JOULES
OPERATING TEMPERATURE	-5°C TO 40°C
STORAGE TEMPERATURE	10°C TO 40°C

*can reach up to 1.5 km, under optimum conditions and in an environment free of obstacles and interference.

KRONOS MVC3

Operational limits

MAXIMUM WIND SPEED AT GROUND LEVEL	9,64 m/s
MINIMUM FLIGHT ALTITUDE (AGL)	20 m
OPERATING TEMPERATURES	TEMPERATURE MINIMALE : -5 °C TEMPERATURE MAXIMALE : 40 °C
USABLE IN RAINY WEATHER	No

KRONOS MVC3

Dimensions and weights

DRONE

22.1 x 9.6 x 9.03 cm

900 g

PARACHUTE

18 x 3.9 x 4.5 cm

130 g

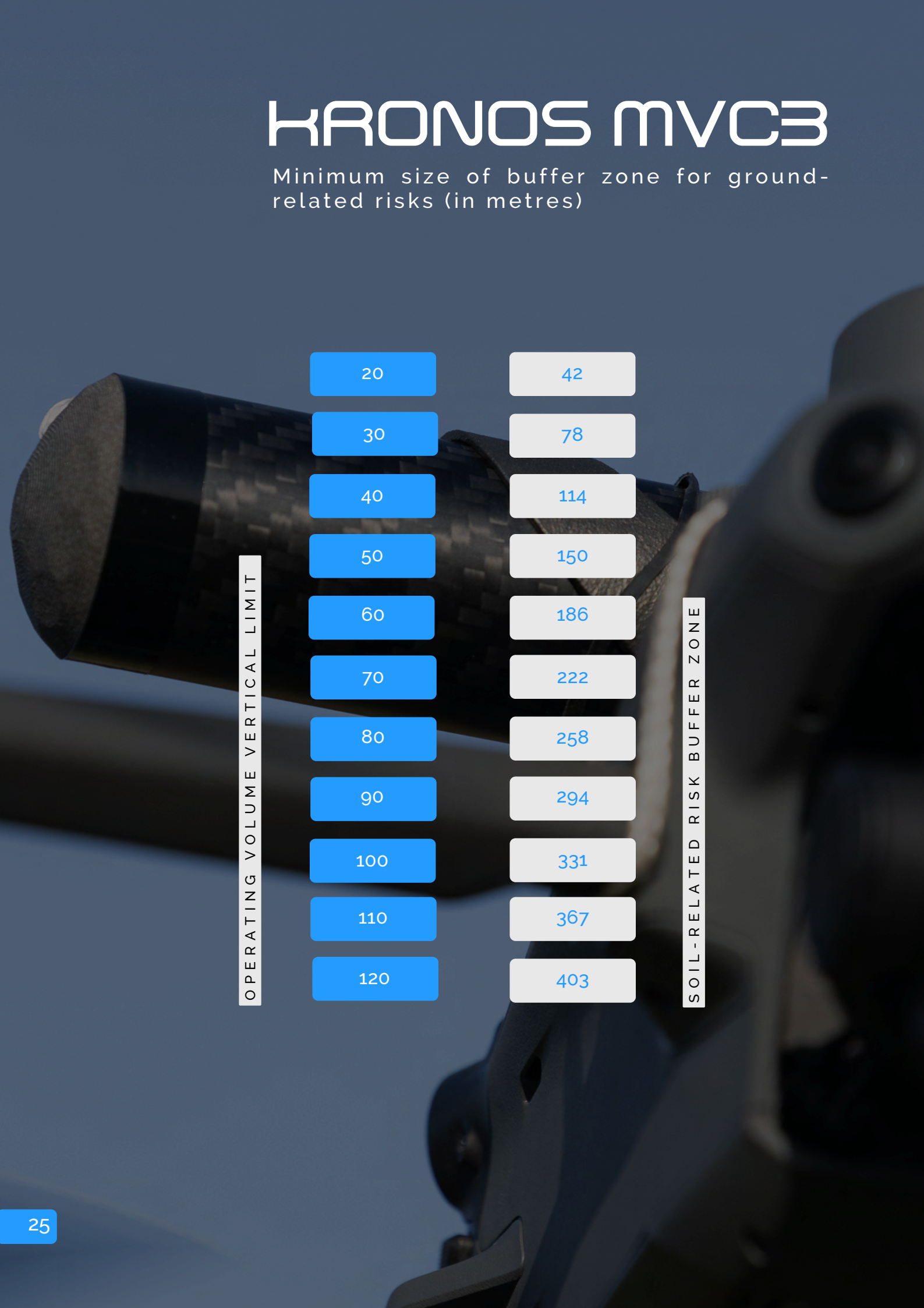
PARACHUTE + DRONE

22.1 x 9.6 x 9.03 cm

1150 g MTOM

KRONOS MVC3

Minimum size of buffer zone for ground-related risks (in metres)



OPERATING VOLUME VERTICAL LIMIT	SOIL-RELATED RISK BUFFER ZONE
20	42
30	78
40	114
50	150
60	186
70	222
80	258
90	294
100	331
110	367
120	403

INSTRUCTIONS

adhesive support installation

To install the adhesive support supplied with the Kronos Mavic 3 parachute, follow the instructions below in order:

Instructions

1. Make sure that the support allows the battery to be changed and that no sensor has its field of vision obstructed.

2. Apply adhesive fixings at least 24 hours before use. Adhesive fixings should only be installed on smooth surfaces. Porous or textured surfaces will not provide sufficient adhesion. When applying the fastener, apply sufficient pressure to ensure full contact over the entire surface.

3. Apply adhesive fixings only to clean, dry surfaces. Wax, oil, dirt or other debris will reduce adhesion and may cause the mount and camera to fall off.

4. Install the adhesive fixings at room temperature.

5. The adhesive in the fixings will not adhere properly if applied in cold or damp environments or on cold or damp surfaces.

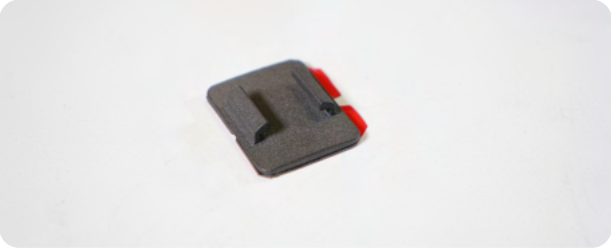
INSTALLATION
of the parachute system

The Kronos Mavic 3 parachute system can be installed in just a few minutes. To install the parachute, please follow the instructions below in order:

Skills & tools required

Installing the parachute requires no special technical skills. No tools are required for installation.

1 Install the adhesive parachute fixing support on the front and centre of the DJI Mavic 3 drone.



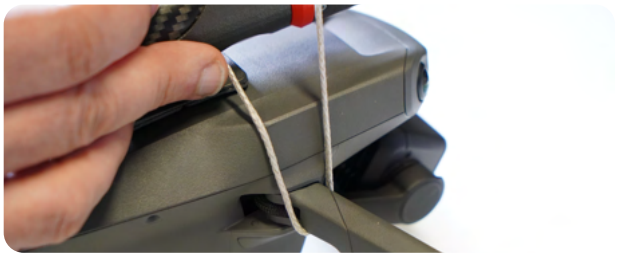
Warning

Make sure that the support allows no sensor to have its field of vision obstructed.

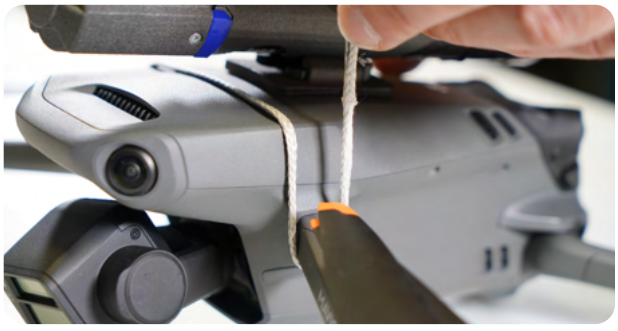
INSTALLATION
of the parachute system

2 Install the parachute assembly on the drone, sliding the parachute fixing clip into the adhesive fixing support installed earlier.

3 Pass the main parachute sling under the front right arm of the drone.



4 Pass the main parachute sling under the front left arm of the drone.



INSTALLATION
of the parachute system

5 Hook the karabiner to the main sling by passing it under the canopy ejection tube. Then pass the elastic around the tube and the main sling. Move the elastic forward until the main sling is taut.

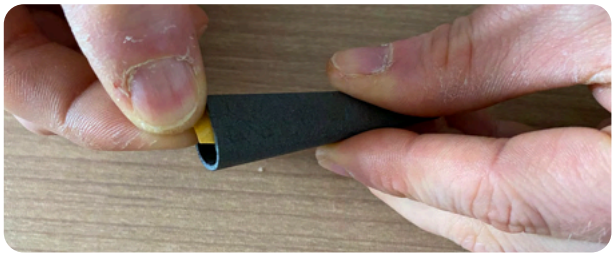


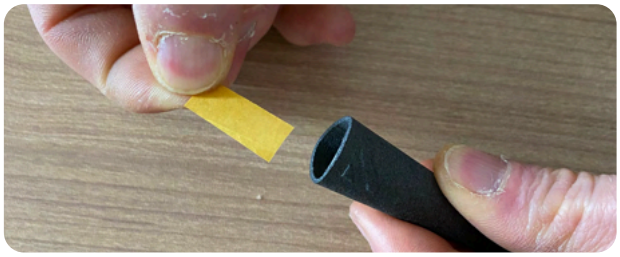

Warning

Make sure that the parachute's main attachment sling is correctly attached to the drone's body and that there is no play that could cause it to come into contact with the propellers.

INSTALLATION
of the parachute system

6 To protect the drone's feet in the event of an emergency landing, 4 DJI Mavic 3 drone leg extensions are included in the kit. Remove the self-adhesive tab for the two front extensions, then insert them. The two rear extensions clip directly onto the drone's rear legs.





7 Your Kronos Mavic 3 parachute is operational.

8 Each installation must be entered in the "Listing of installations and de-installations and maintenance operations" section on page 56.

INSTALLATION

of the parachute system with accessory

1 Install the adhesive parachute fixing support horizontally on the back of the DJI Mavic 3 drone.




Warning

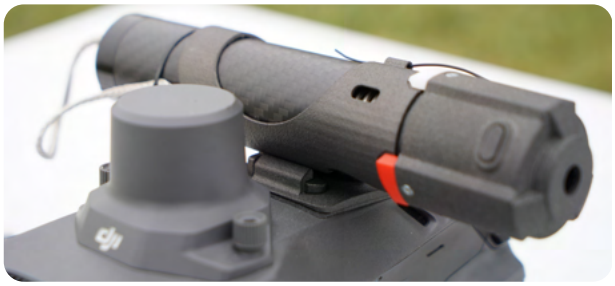
Make sure that the support allows no sensor to have its field of vision obstructed.

INSTALLATION

of the parachute system with accessory

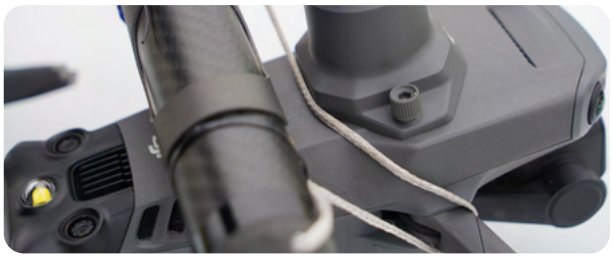
2 Install the parachute assembly on the drone, sliding the parachute fixing clip into the adhesive fixing support installed earlier.



3 Pass the main parachute sling under the front right arm of the drone.



INSTALLATION

of the parachute system with accessory

4 Pass the main parachute sling under the front left arm of the drone.

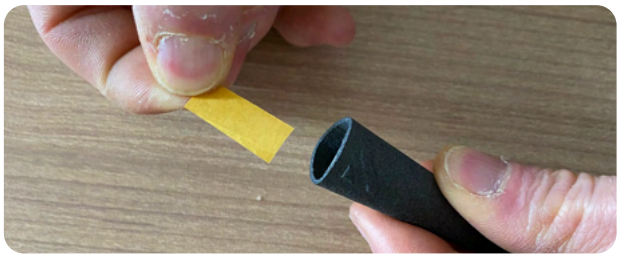
5 Attach the karabiner to the main sling. Then pass the elastic around the tube and the main sling. Pull the elastic forward until the main sling is taut.

INSTALLATION
of the parachute system with accessory

Warning

Make sure that the parachute's main attachment sling is correctly attached to the drone's body and that there is no play that could cause it to come into contact with the propellers.

6 To protect the drone's feet in the event of an emergency landing, 4 DJI Mavic 3 landing gear extensions are included in the kit. Remove the self-adhesive tab for the two front extensions, then insert them. The two rear extensions clip directly onto the drone's landing gear



7 Your Kronos Mavic 3 parachute is operational.

8 Each installation must be entered in the "Listing of installations and de-installations and maintenance operations" section on page 54.

START-UP
of the parachute system

To start-up the parachute system, follow these instructions in order:

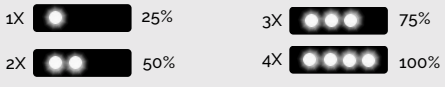
Instructions

1 Switch on the parachute by holding down the black ignition button for 1 second. The LED indicates start-up by a sequence of colours and the audible alarm beeps 3 times to indicate that it is operating correctly. The LED then indicates the battery level. The LED then flashes yellow to indicate that the parachute is powered up.

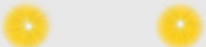
2 Your Kronos Mavic 3 parachute is switched on.

The different LED states

System initialisation



Battery level indicator



Parachute on, waiting to be activated

ACTIVATION
of the parachute system

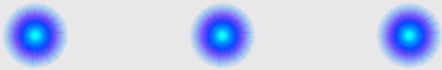
To activate the parachute system, follow these steps in order:

1 The parachute automatically detects the ignition of your drone's engines (or any other movement), during this phase double beeps are emitted. Once take-off has been detected, 2 beeps are emitted and the LED on the parachute and on the Klick trigger remote control now flash dark blue to indicate that autonomous deployment is active.

The different LED states

Autonomous deployment being activated

CONTINUOUS DOUBLE BEEP



Autonomous deployment activated

2 SHORT, LOUD BEEPS

Warning

If you notice that the parachute system does not detect the take-off correctly (no beep and no dark blue LED), this may be due to a slow take-off or a low take-off height. We advise you to launch quickly from a height of at least 5 metres.

If you are not about to take off with your DJI Mavic 3 and you hear continuous double beeps (purple LED), your parachute system has detected vibrations. A risk of autonomous deployment activation may exist. Switch off your parachute system, otherwise the autonomous deployment may be activated and your parachute system unintentionally deployed.

2 Your Kronos Mavic 3 parachute is active with autonomous deployment.

DEACTIVATION
of the parachute system

To deactivate the parachute system, follow these instructions in order:

1 The parachute automatically detects a landing. After a period of approximately 5 seconds. 1 beep is emitted by the parachute and the parachute LED is no longer dark blue. The take-off detection module is deactivated (it will reactivate automatically if you take off again).

The different LED states

Parachute on and not connected to Klick trigger remote control

BEEP SOUND

Parachute on and connected to Klick trigger remote control

BEEP SOUND

Warning

If you notice that the parachute system does not detect the landing correctly (no beep and no purple LED), do not handle the drone as this could deployed the parachute. Wait a further 5 seconds.

2 Autonomous deployment of the parachute system is deactivated, but your parachute remains active and can be deployed using the Klick trigger remote control.

3 To deactivate your parachute system completely, switch off the parachute system by holding down the black ignition button for 1 second, or by switching off the DJI Mavic 3 drone.


YOUR PARACHUTE IS
ACTIVE AND
OPERATIONAL!

DEPLOYMENT
of the parachute system

To deploy the Kronos Mavic 3 parachute system (with autonomous deployment or manually), observe the following safety instructions:

Warning

1. Never attempt to deploy the parachute on the ground.

2. The Kronos Mavic 3 parachute is designed to be deploy at a minimum height of 20 m from the ground in standard atmospheric conditions.

3. For a fall from a height of 20 m, the impact on the ground is less than 4 joules with the Kronos Mavic 3 parachute system, compared with 226 joules without any device.

This data may vary according to altitude above sea level, relative wind and many other external factors. That's why we recommend a minimum height of 20 m above ground level to deploy the Kronos Mavic 3 parachute system and sufficiently limit the impact of your drone on the ground.

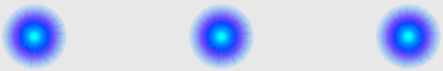
AUTONOMOUS
system deployment

1 When autonomous deployment is activated, no manual action is required to deployed the parachute. Our autonomous deployment technology implemented in our parachutes enables the parachute to be deployed automatically, should the drone find itself in a critical loss-of-control situation.

Warning

If you find that the parachute system does not detect take-off correctly (no beep and no dark blue LED), this may be due to a slow take-off or a low take-off height. We advise you to launch quickly from a height of at least 5 meters.

The different LED states



Autonomous deployment enabled

BEEP SOUND

MANUAL
system deployment

To deploy the parachute manually, observe the following safety instructions:

Instructions

1. Find out how to deploy your Kronos Mavic 3 parachute system manually using our Klick trigger remote control instruction and user manual.

KLICK

manual deployment of the PRS

Consult our Klick user manual

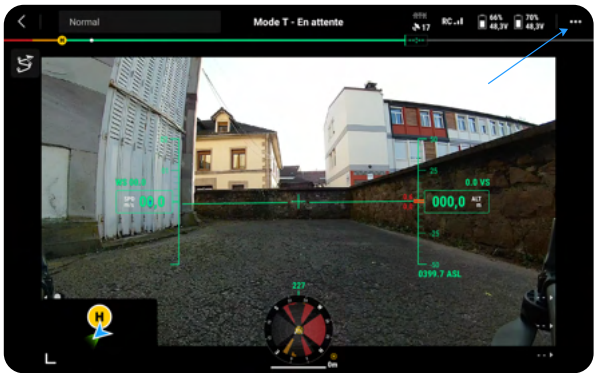
MODE
low speed

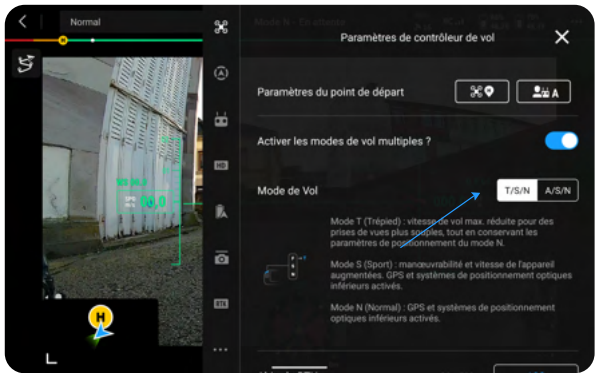
European EASA regulations require the inclusion of a low-speed mode that can be selected on the drone and activated manually by the drone operator. When low-speed mode is activated, the drone cannot exceed a speed of 5 m/s. To activate the low-speed mode (Mode T), follow the steps below in order:

Instructions

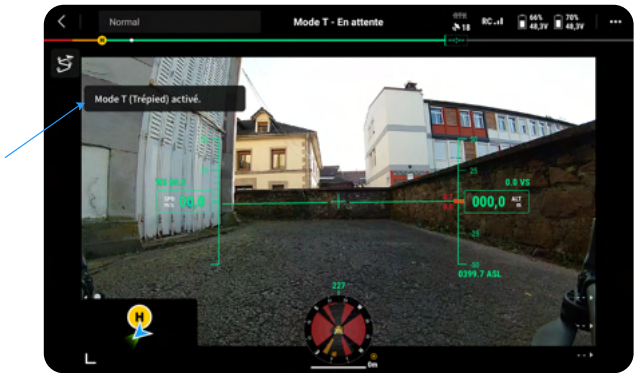
1 Switch on your DJI RC Plus remote control.

2 Access the camera view, then click on the menu represented by the 3 dots in the top right-hand corner of the screen. Check that the T/S/N flight mode is selected.





3 Toggle the flight mode selector on the DJI RC Plus radio control from mode N to mode F. Mode F corresponds to mode T.



MODE

sport

The use of mode S (Sport) when using the C5 conversion kit on the DJI Mavic 3 drone is prohibited. All tests carried out on the Kronos Mavic 3 conversion kit were performed in N (Normal) mode.

Warning

When using the SPORT mode, Dronavia accepts no responsibility for the parachute system not deployment, partially deployment or deployment more slowly.

STATES
of DJI remote controller

Indicators on the DJI remote controller allow you to check the signal status between the DJI Mavic 3 drone and the DJI remote controller during a flight.

Strong signal

Low signal

STATES

of DJI remote controller

Lost signal

STOP

& resetting the parachute system

To stop, switch off and reset the parachute, follow the instructions below in order:

Instructions

1 Press and hold (3 seconds) the ignition button, the LED indicates the battery level and then goes out. the system is switched off.

2 Switch off your Klick trigger remote control.

Warning

Any manipulation of the parachute while it is still switched on (moving the drone on foot or in a car) may result in a false autonomous deployment and deployment of the parachute. If the drone remains stationary for more than 10 minutes, the parachute will automatically switch off.

DISASSEMBLY

the complete parachute system

To dismantle the whole parachute system, follow the installation instructions in reverse order.

1 Each de-installation must be entered in the "List of installations, de-installations and maintenance operations" section on page 54.

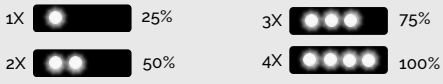
CHECKING
of the parachute system battery

To check the battery status of the parachute system, follow the instructions below in order:

Instructions

1 Press the parachute ignition button quickly. The number of flashes indicates the remaining charge level.

The different LED states



Battery level indicator

CHARGING
of the parachute system battery

To charge the parachute battery, follow the instructions below in order:

Instructions

1 To recharge the parachute battery, simply connect the supplied micro-USB cable to the parachute's micro-USB socket located near the ignition button. Then plug the USB socket into a computer.

The different LED states

Battery charging

Battery charged

RESETTING
of the parachute system

In the event of a malfunction or any other bug, follow the instructions below in order:

Instructions

1 To reset the parachute system, there is a small hole in the back of the parachute. Slide a paper clip or other thin object through the hole, and a short press will reset the entire parachute system.

Warning

If the malfunction persists, contact Dronavia customer service or your reseller.

MAINTENANCE

parachute annual

TO BE READ CAREFULLY

Like all rescue systems (rescue parachutes for paragliders or parachutists, avalanche airbags, etc.) Dronavia parachutes must undergo preventive maintenance to be kept in optimum working order. The only preventive maintenance operation is to replace the POD. It's a quick and easy operation, which means that pilots never have to leave their drone grounded.

A use-by date is set for each POD. Dronavia disclaims all liability and cancels the warranty if your POD has exceeded this use-by date.

PROCEDURES

maintenance requirements

To be kept in optimum working order, each parachute system must undergo preventive or post-deployment maintenance. Here is a summary table of the mandatory maintenance operations:

FREQUENCY	OPERATION	CAN BE MADE BY
Every year	Replacement of the canopy	Final user **or** DRONAVIA or any certified partner
Every 5 years	Mandatory manufacturer global maintenance	Manufacturer
After every deployment	Rearming of the parachute system	Final user **or** DRONAVIA or any certified partner
After every deployment	Replacement of the canopy **or** Repackaging of the canopy	Final user **or** DRONAVIA or any certified partner
After 30 deployments	Mandatory manufacturer global maintenance	Dronavia

Warning

If you wish to carry out global maintenance yourself, Dronavia will disengage its responsibility for the system, in addition to cancelling the warranty.

LISTING

parachute deployment failures

If the Kronos MVC3 parachute system deployment fails during flight, record the following:

UAS Concerned with the failed activation	Accumulated Flight Hours at activation failure	Distance between Control Unit and UAS at activation attempt	Location of the operation	Presence of high power emitter in the operational volume

LISTING

voluntary and intensive parachute deployments

If the Kronos MVC3 parachute system is deployed during flight, record the following:

UAS Concerned with the failed activation	Accumulated Flight Hours at activation failure	Distance between Control Unit and UAS at activation attempt	Location of the operation	Was the activation commanded or un-commanded	Presence of high power emitter in the operational volume

Warning

If the probability of failure observed in service is greater than 10-2/FH (taking into account the statistical uncertainty), the operator must inform the competent authority.

LISTING

of installations / de-installations & maintenance operations

To be kept in optimum working order, each parachute system must be monitored for installation, de-installation, firmware updates, preventive or post-deployment maintenance. The following table summarizes the operations to be listed:

Date	Operation	Issues	Operator and signature

USE-BY DATE
for the POD

Each POD has a use-by date to ensure that it remains in optimum working order:

The optimum life of a POD is 1 year. The use-by date is shown on the label on the back of the parachute.

A new expiry date label is supplied inside the POD to replace the original label on the parachute.

Warnings

If a POD is used after its use-by date, Dronavia accepts no liability for partial or slower deployment of the parachute system.

PROCEDURE

return of the POD for maintenance

There are several options for exchanging your POD that is past (or close to) its use-by date:

Buy 99€

1 Buy a POD in advance from your reseller. You'll be able to continue flying during the annual maintenance of your first POD.

Exchange 49€

2 Return your POD to a reseller and receive a new one at a special price.

Warning

Plan in advance the time needed to contact your reseller (order, delivery time, etc.) so as not to exceed the expiry date and compromise your flight missions.

DISASSEMBLY

of the POD system for maintenance

To remove the POD from the parachute system, follow the instructions below in order:

Instructions

1 Switch off your DJI Mavic 3 drone, then remove the parachute from its mounting.

2 Remove the karabiner, then remove the main sling from around the two front arms of the drone.

DISASSEMBLY
of the POD system for maintenance

3 Remove the adhesive tape from the back of the parachute, then remove the capsule.

4 Remove the canopy from the ejector tube.

5 Send the used POD to Dronavia or your reseller.

REARMING

the Kronos parachute system

TO BE READ CAREFULLY

Following a parachute deployment, Kronos parachute systems have been thought out and designed to rearm quickly and allow telepilots to continue their missions following a deployment.

There are some simple procedures to be carried out following a deployment. As some procedures are dangerous, we advise you to read this section carefully.

A use-by date is set for each POD. Dronavia disclaims all liability and voids the warranty if your POD has exceeded this use-by date.

REARMING
of the parachute system

To rearm your parachute system, follow the instructions below in order:

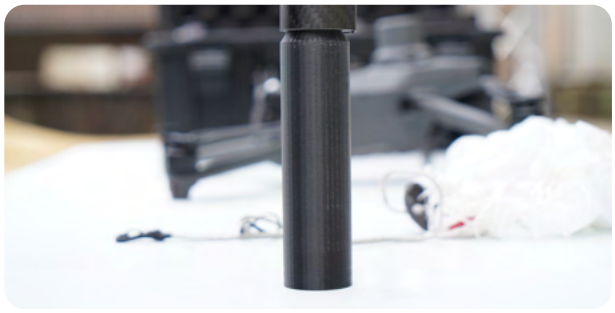
Instructions

1 Switch off your DJI Mavic 3 drone, then remove the parachute from its fixing support.

2 Remove the karabiner, then remove the main sling from around the two front arms of the drone.

REARMING
of the parachute system

3 Push back the parachute piston using the tool provided.

4 Take your new POD and remove the adhesive tape to gain access to the canopy.


REARMING
of the parachute system

5 Remove the adhesive from the new POD, then pull the canopy out of the new POD.

REARMING
of the parachute system

6 Press the new canopy into the bottom of the tube of your Kronos Mavic 3 parachute.



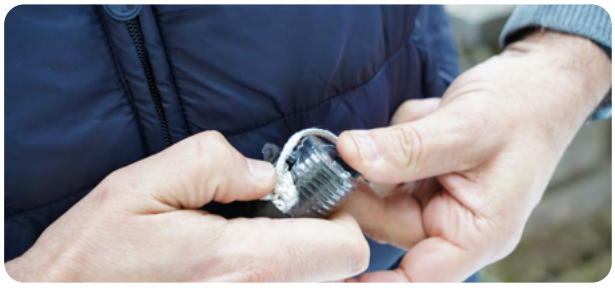

Warning

Be sure to keep the main sling in line with the canopy when inserting it.

REARMING
of the parachute system

7 Maintain pressure while pulling the main sling out of the parachute.

8 Press down on the top part of the new POD to exert additional pressure and free up space for your thumb.



Warning

Remember to maintain firm pressure throughout.

REARMING
of the parachute system

9 Remove the plastic sleeve surrounding the new fabric by pulling it outwards.

10 While continuing to exert pressure on the inserted cloth, remove the top part of the new POD.

REARMING
of the parachute system

11 Position the capsule and close the parachute with it.

Warning

Check that none of the canopy lines are blocked by the capsule.

12 Stick the adhesive tape provided around the flat edge of the capsule.

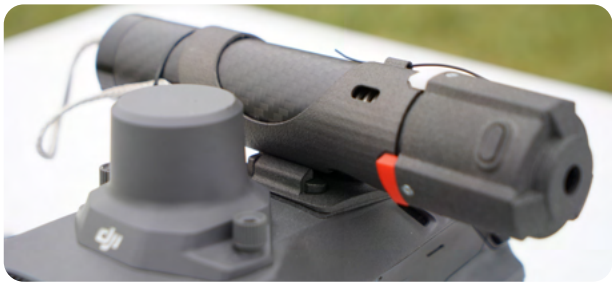
Warning

Position the adhesive tape only on the flat edge of the capsule. If the tape supplied covers too much of the capsule, there is a risk that the parachute will not release or will release more slowly.

REARMING
of the parachute system

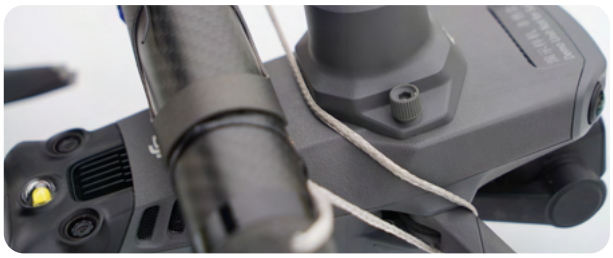
13 Install the parachute assembly on the drone, sliding the parachute fixing clip into the adhesive fixing support installed earlier.



14 Pass the main parachute sling under the front right arm of the drone.



REARMING
of the parachute system

15 Pass the main parachute sling under the front left arm of the drone.

16 Attach the karabiner to the main sling. Then pass the elastic around the tube and the main sling. Pull the elastic forward until the main sling is taut.

REARMING
of the parachute system

Warning

Make sure that the parachute's main attachment sling is correctly attached to the drone's body and that there is no play that could cause it to come into contact with the propellers.

17 For each POD system replacement, please refer to chapter "Listing of installations, de-installations and maintenance operations" on page 54.


YOUR PARACHUTE IS REARMED!

PROCEDURE
for returning a used POD

There are several options for returning your used POD:

Buy 99€

1 Buy a POD from your reseller. Then carry out maintenance on your used POD.

Exchange 49€

2 Return your used POD to a reseller and receive a new POD at a special price.

Warning

Plan in advance the time needed to contact your reseller (order, delivery time, etc.) so as not to exceed the expiry date and compromise your flight missions.

KRONOS SYSTEMS

INTERNAL FLIGHT TERMINATION SYSTEM FOR DJI MAVIC 3

COMPONENTS

presentation

FTS module
integrated into the
DJI Mavic 3 drone

Klick trigger
remote contol

KRONOS MVC3

Technical specifications

TOTAL WEIGHT	3 GRAMMES
COMMUNICATION WIRELESS RADIO	SRD860 WITH ENCRYPTED KEY (869 MHZ / 100 MW)
RANGE OF THE KLICK REMOTE CONTROL	1500 METERS
AUTONOMY KLICK REMOTE CONTROL	30 HOURS
OPERATING TEMPERATURE	-25°C À 40°C

DESCRIPTION
of the FTS system

Description

The Kronos Mavic 3 FTS, developed for the DJI Mavic 3, prevents the drone equipped with it from leaving its regulation flight envelope by cutting (manually or automatically) the drone's power supply in less than a second.

Installation

The Kronos Mavic 3 FTS is installed between the autopilot and the drone's ESCs. It activates the cut-off of the motor control signal.

Start-up

To start the Mavic 3 FTS system, switch on your DJI Mavic 3 drone and the FTS system will switch on automatically, then switch on your Klick trigger remote control by pressing and holding the start button on the Klick trigger remote control. When the FTS is properly connected, a green LED flashes on the remote control and on the FTS module. Activation is detailed on page 76.

Activation

In order to keep the possibility of activate at your fingertips and to be as reactive as possible, a simple gesture allows you to cut the motors and deploy your parachute (if your drone is equipped with one). Simply press the triangular button on the Klick trigger remote control for at least 1 second. How to activate the FTS is described in detail in the Klick trigger remote control user manual.

START-UP
of the FTS system

To start the FTS, follow the instructions below in order:

Instructions

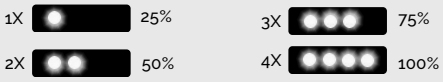
1 Switch on your DJI Mavic 3 drone. The FTS will switch on automatically.

2 Switch on your Klick trigger remote control. When the FTS system is properly connected, a green LED flashes on the Klick trigger remote control and on the FTS module.

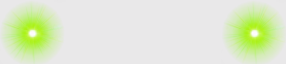
START-UP
of the FTS system

The different LED states

System initialisation



Battery level indicator



FTS only connected


YOUR FTS IS ACTIVE
AND OPERATIONAL!

ACTIVATION

manual of the FTS system

To activate the FTS manually, observe the following safety instructions:

Instructions

1. Find out how to manually activate your Kronos Mavic 3 FTS system with our Klick trigger remote control instruction and user manual.

KLICK

manual activation of the FTS

Consult our Klick user manual

ACTIVATION

automatic of the FTS system

To automatically activate your FTS, follow these instructions in sequence

Instructions

1 Switch on your DJI Mavic 3 drone. The FTS will switch on automatically.

2 Switch on your Klick tirgger remote control. When the FTS is properly connected, a green LED flashes on the Klick trigger remote control and on the FTS module.

3 When the parachute system is deployed, the FTS system is also automatically activates, thanks to a wireless connection and pairing between the two systems by Dronavia's experts.

PROCEDURE

FTS system test

Before the flight or before the first flight of the day, you can test the FTS system. Follow the instructions below in order:

Instructions

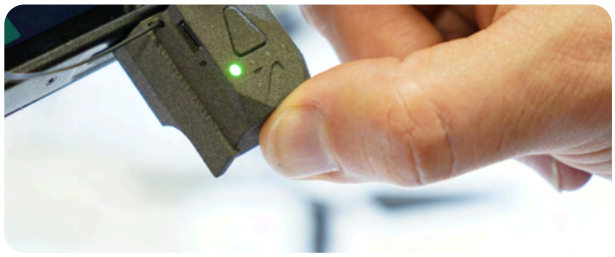
1 Check that the LED on your FTS and Klick trigger remote control is flashing green. If your drone is fitted with a parachute, check again that it is switched off.

PROCEDURE

FTS system test

2 Arm the motors and initiate rotation while keeping the drone on the ground.

3 Stop the rotation of the motors by pressing the Klick triggering button on the Klick trigger remote control. Check that the motors stop correctly and that the green light on the Klick trigger remote control and on the FTS flashes rapidly.



STOP
& resetting FTS system

To stop, switch off and reset the FTS, follow the instructions below in order:

Instructions

1 Switch off your DJI Mavic 3 drone and the FTS system will shut down automatically.

2 Switch off your Klick trigger remote control.

DISASSEMBLY
of the FTS system

Dismantling the FTS requires a visit to the workshop so that our experts can carry out the operation.

Warning

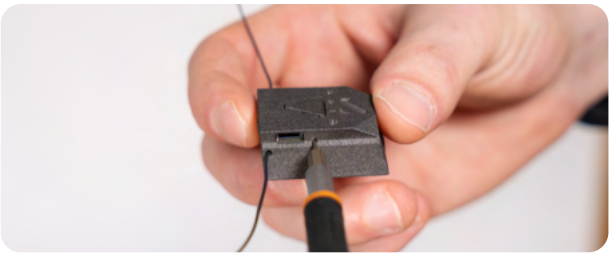
If you dismantle or modify the FTS yourself, Dronavia disclaims all liability and will void the warranty on your system.

RESETTING
of the FTS system

In the event of a malfunction or any other bug, follow the instructions below in order:

Instructions

1 To reset the Klick trigger remote control, you'll find a small hole on the left-hand side. Insert a paper clip or other thin object into the hole and press it down briefly.



Warning

If the malfunction persists, contact Dronavia customer service or your reseller.

MAINTENANCE & guarantees

STORAGE

Store C5 Kronos Mavic 3 conversion kit system for DJI Mavic 3 in a dry place, at a temperature between 10°C and 30°C, clean and protected from UV light.

GUARANTEE

Dronavia takes great care in the design and production of its products. We guarantee our conversion kit for one year from the date of purchase against any defect or design fault that may arise during normal use of the product. Any abusive or incorrect use, or exposure to aggressive factors (high humidity, excessively high temperatures, etc.) that could lead to damage will invalidate this warranty.

NOTICE OF LIABILITY

Flying a drone, whether manual or automatic, is an activity that requires attention, specific knowledge and good judgement. Be cautious, get trained in appropriate structures, take out insurance and comply with the requirements defined by the DGAC decrees of 11 April 2012 and 17 December 2015 and the EASA.

Ask our sales team your questions

LINKS to know

For France, we recommend that you consult the website of the Ministry of Ecology, Sustainable Development and Energy if you have any doubts or questions. For Europe, we recommend that you consult the EASA website. Remember that you are flying under your own responsibility.

Website of the Ministry of Ecological Transition and Territorial Cohesion

Details of class C5 published by EASA :

The IGn map of restricted areas for drones

European Union Aviation Safety Agency (EASA)

The French Civil Aviation Authority (DGAC)

Ask our sales team your questions

CONTACT US

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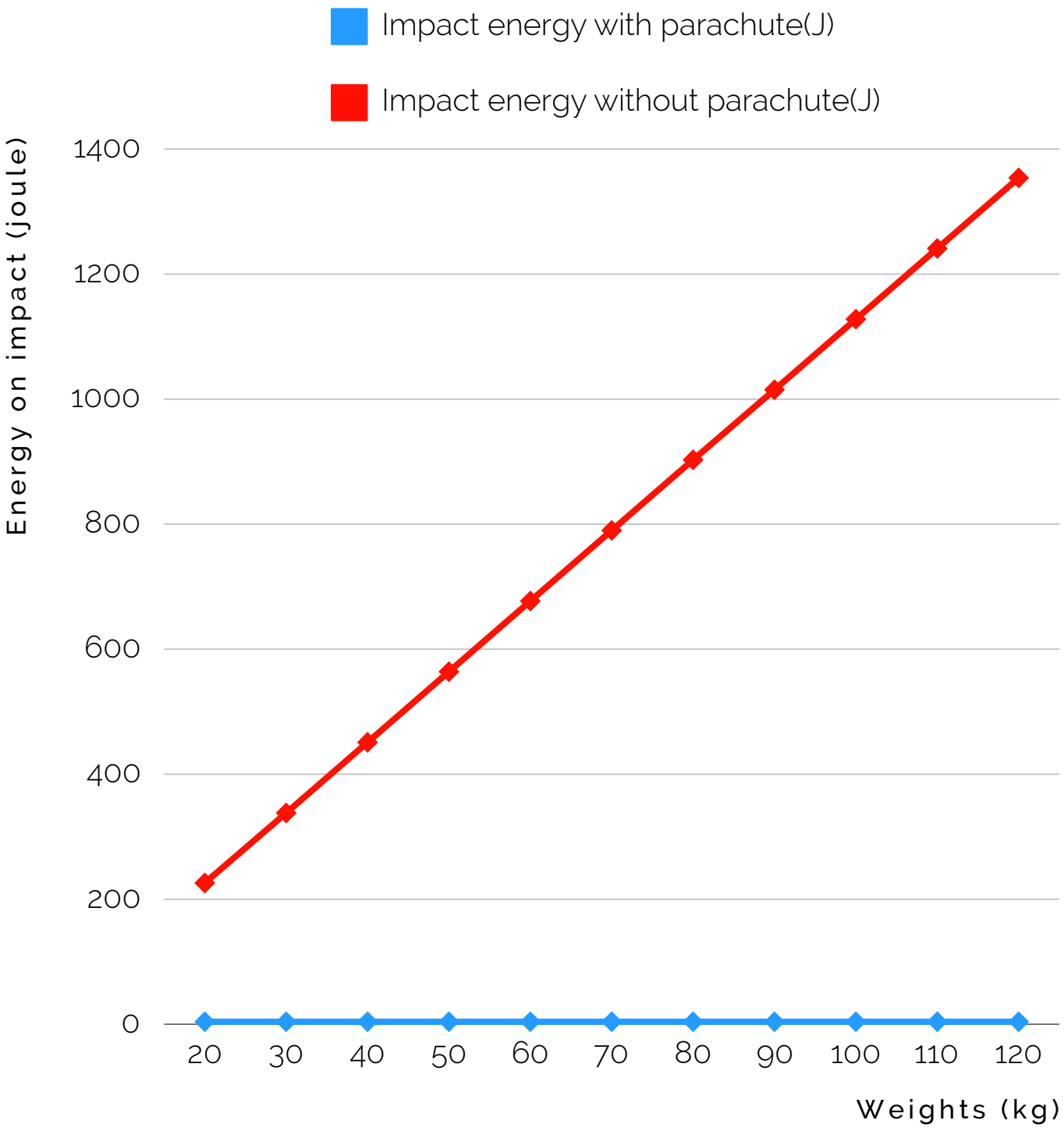
| Dronavia Channel

APPENDICES

Impact energy (joule) X Weight (kg)



APPENDICES

Falling speed (m/s)) X Weight (kg)

Weight (kg)	Falling speed (m/s)	Fall speed without parachute (m/s) *
1.15 kg	2,67 m/s	19,72 m/s

*for a fall from a height of 20 metres

APPENDICES

Deployment height (m) / Minimum extent of buffer zone for ground-related risks (m)

OPERATING VOLUME - VERTICAL LIMIT	SOIL-RELATED RISK BUFFER ZONE
20	42
30	78
40	114
50	150
60	186
70	222
80	258
90	294
100	331
110	367
120	403

The ground risk threshold can be calculated as a function of different drone parameters and different assumptions. Please refer to the document dedicated to calculating the ground risk threshold, if you need to calculate more precise ground risk thresholds for your application.

DECLARATION

of C2 class label conformity

Declaration of Conformity

Product Name: DJI Mavic 3T EU
Model Number : M3T-EU
UAS Class : C2
Guaranteed sound power level: 82dB(A)
Manufacturer's Name : SZ DJI TECHNOLOGY CO., LTD.
Manufacturer's Addres: Lobby of T2, DJI Sky City, No. 53 Xianyuan Road, Xili Community, Xili Street, Nanshan District, Shenzhen China

We, SZ DJI TECHNOLOGY CO., LTD. declare under our sole responsibility that the above referenced product is in conformity with the applicable requirements of the following directives:

RED Directive: 2014/53/EU

RoHS Recast Directive: 2011/65/EU (EU)2015/863

WEEE Directive: 2012/19/EU

REACH Regulation: 2006/1907/EC

UAS Regulation：2019/945/EU & 2020/1058/EU

MD Directive：2006/42/EC

Conformity with these directives has been assessed for the product by demonstrating compliance to the following harmonized standards and/or regulations:

Radio Spectrum EN 300 328 V2.2.2 EN 300 440 V2.2.1 EN 303 413 V1.2.1
Safety EN 62368-1:2014+A11:2017
Health EN IEC 62311:2020; EN 62479:2010
EMC EN 55032:2015+A11:2020 EN 55035:2017+A11:2020
EN 301 489-1 V2.2.3 EN 301 489-3 V2.1.1
EN 301 489-17 V3.2.4 EN 301 489-19 V2.1.1
RoHS 2011/65/EU (EU)2015/863
WEEE 2012/19/EU
REACH 2006/1907/EC
UAS prEN 4709-001: 03.2023 with D5 WG8
prEN 4709-002: 02.2023 with Edition P 1, February 2023
prEN 4709-003: 02.2023 with Edition P 1, February 2023
prEN 4709-004: 02.2023 with Edition P 1, February 2023
MD 2006/42/EC

The notified body, TüV Rheinland LGA Products GmbH, notified body number: 0197, performed the EU-type examination in according with Annex III, Module B of Council Directive 2014/53/EU, and issued the EU-type examination certificate: RT 60170285 0001

Signed for and on behalf of: SZ DJI TECHNOLOGY CO., LTD.

Place: Shenzhen, China Date: 2023-07-17

Name: Gary Zeng Position: Certification manager

Signature: Gary. Zeng

CE

Annex 1 Accessories

Item	Model Number	Quantity	Software*	Remark
DJI RC Pro	RM510B	1	V01.00.00.00	Essential
Intelligent Flight Battery	BWX260-5000-15.4	1	/	Accessory
USB Cable	/	1	/	Accessory
DJI Mavic 3 Enterprise series Low-Noise Propellers	/	6	/	Accessory
Power Adapter	CDX265-100	1	/	Accessory
DJI Mavic 3 Enterprise series RTK Module	M3RTK	1	/	Accessory

*Note: Updated software will be released by manufacturer to fix bugs and improve the performance after the product

placed on the market. All updated versions released by the manufacturer have been verified to be complied with the applicable regulations. All RF parameters (e.g., RF power, frequency) are not accessible to end users and cannot be changed by any third parties.

DECLARATION

of C2 class label conformity

Declaration of Conformity

Product Name: DJI Mavic 3E EU
Model Number : M3E-EU
UAS Class : C2
Guaranteed sound power level: 82dB(A)
Manufacturer's Name : SZ DJI TECHNOLOGY CO., LTD.
Manufacturer's Addres: Lobby of T2, DJI Sky City, No. 53 Xianyuan Road, Xili Community, Xili Street, Nanshan District, Shenzhen China

We, SZ DJI TECHNOLOGY CO., LTD. declare under our sole responsibility that the above referenced product is in conformity with the applicable requirements of the following directives:

RED Directive: 2014/53/EU

RoHS Recast Directive: 2011/65/EU (EU)2015/863

WEEE Directive: 2012/19/EU

REACH Regulation: 2006/1907/EC

UAS Regulation： 2019/945/EU & 2020/1058/EU

MD Directive： 2006/42/EC

Conformity with these directives has been assessed for the product by demonstrating compliance to the following harmonized standards and/or regulations:

Radio Spectrum EN 300 328 V2.2.2 EN 300 440 V2.2.1 EN 303 413 V1.2.1
Safety EN 62368-1:2014+A11:2017
Health EN IEC 62311:2020; EN 62479:2010
EMC EN 55032:2015+A11:2020 EN 55035:2017+A11:2020
EN 301 489-1 V2.2.3 EN 301 489-3 V2.1.1
EN 301 489-17 V3.2.4 EN 301 489-19 V2.1.1
RoHS 2011/65/EU (EU)2015/863
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Signed for and on behalf of: SZ DJI TECHNOLOGY CO., LTD.

Place: Shenzhen, China Date: 2023-07-17

Name: Gary Zeng Position: Certification manager

Signature: Gary Zeng

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Intelligent Flight Battery	BWX260-5000-15.4	1	/	Accessory
USB Cable	/	1	/	Accessory
DJI Mavic 3 Enterprise series Low-Noise Propellers	/	6	/	Accessory
Power Adapter	CDX265-100	1	/	Accessory
DJI Mavic 3 Enterprise series RTK Module	M3RTK	1	/	Accessory

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DECLARATION

of C2 class label conformity

Declaration of Conformity

Product Name: DJI Mavic 3M EU
Model Number : M3M-EU
UAS Class : C2
Guaranteed sound power level: 82dB(A)
Manufacturer's Name : SZ DJI TECHNOLOGY CO., LTD.
Manufacturer's Addres: Lobby of T2, DJI Sky City, No. 53 Xianyuan Road, Xili Community, Xili Street, Nanshan District, Shenzhen China

We, SZ DJI TECHNOLOGY CO., LTD. declare under our sole responsibility that the above referenced product is in conformity with the applicable requirements of the following directives:

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