



11
Years
MikroKopter



MikroKopter.de

Product Overview
Professional drones & flying robots



Location Germany - *strengthen the region*



HiSystems - High Tech from Lower Saxony

HiSystems has been developing and distributing MultiKopter hardware and software since 2006 under the name **MikroKopter**.

Meanwhile, there are many more MultiKopter systems based on our electronics. From the north-west part of Germany we send MikroKopter components worldwide. Another field of **HiSystems GmbH** is the development and production of electronics for industrial applications.

In 2015 and 2016 products, in which we participated with development, has been awarded with the Innovation Award and the Federal Award of craft.

Furthermore the **MK8-3500 Standard** was awarded with the "**Innovation Award IT**" by the Mittelstand initiative in 2017.

The development, the final assembly and testing of the MikroKopter takes place in Germany. Key components of the electronics are also made in the region.

When choosing the supplier of MikroKopter components we try, if possible, to rely on local companies.



The most important features and functions:



Redundancy

Increased safety throughout doubly existing flight electronic. The failure of a component or a motor can be compensated.



Navigation systems

Glonass, Beidou, Galileo or GPS: Of course we support all important navigation satellites.



Failsafe

During a reception failure the drone flies back autonomously and lands at the starting point. If an undervoltage occurs the pilot will be warned via a voice output and a display.



Auto - ComingHome

If the battery voltage reaches a critical value the MikroKopter flies back automatically to the starting point and goes independently into a descent flight.



Autostart + Auto-landing

Via a switch the drone starts automatically and hovers in approx. 2m in front of you. With the same switch the Kopter goes into a gentle landing.



Telemetry and Voice Assistance

Via a button the voltage, height, distance etc. can be announced. Own menu operation in the transmitter – i.e. Storing and retrieving waypoints.



GPS-flight assistant / Autopilot

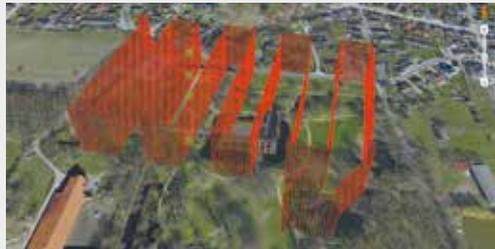
With this feature the drone is maintaining the course and position. Position Hold / Coming Home and Waypoints control the Kopter reliably through the air.



Logbook / Flight recorder

The data of the flight will be saved on a SD-card. Logged will be GPS position, height, speed, voltage, switch position, flight attitude and much more.

The MikroKopter-Tool - a powerful tool



To create a 3D model (in this case the castle Evenburg in Leer) sufficient aerial photographs from a low height of the object or area need to be available.

Simulation with the KopterTool

With this function you can simulate the waypoint flight within the KopterTool and display the flight graphically.

MikroKopter Features - Safety, comfort and flexibility

Since 2006 the **MikroKopter** technology has been continuously developed. In that time we have always pushed ahead the functions of our flight systems. In this case, the performance, and especially the safety of the **MikroKopter** is in the foreground.

Of course, we have set ourselves for the increasing demands by opening up various fields of activity. We have not lost our focus for higher accessibility.

Fail-safe

Through our developed redundancy system **MikroKopter** is the **first Multicopter system** at all which received the the so-called **D-registration in Austria**. The fact, that the safety has supreme priority for our customers shows also that we hold tight on our Okto principle. 8 motors offer even **more safety and performance** as 6 or 4.

The MK8-3500 Standard

Proven technology, redefined



Compact, robust and clever designed:
The MK8 Transport case.

The now 4th generation of our universal carrier platforms combines proven **MikroKopter** control electronics with a new concept: **More power, more flexibility and more security.**

The full carbon frame of the **MK8** is easy to disassemble, easy to transport and offers an unprecedented stability. 8 powerful brushless motors guarantee flight times of **nearly 40 minutes**– of course with full redundancy to ensure maximum safety for equipment and pilots.

Redundancy means for the MK8-3500 that in case of a failure (for example, Lipo, sensor, motor, propeller, flight control, ...) during operation, the copter does not crash. For this reason the **MK8-3500 is designed as Oktokopter.**



The flight control in
Redundant version

The MK8-3500 Thermo

New perspectives through different eyes

The MK8 observes the target area. The pilot can switch between live and thermal images as required.

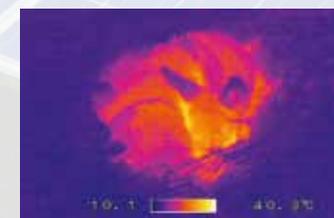
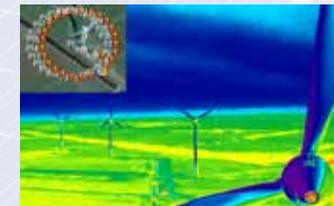
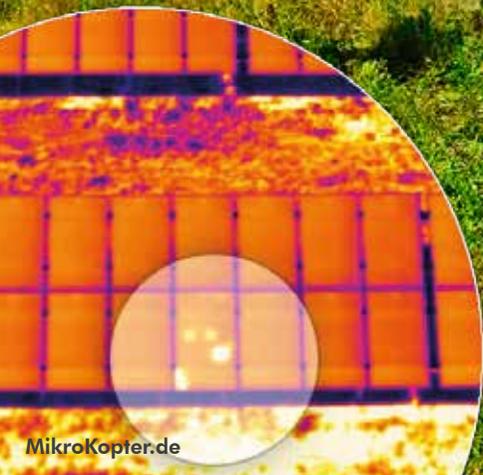


The area Thermography has been evolved in the past years became an important part of our lives. Whether in industrial applications, research and technology, nature and wildlife observation, or agriculture: the area thermography is omnipresent and almost inconceivable.

For us, as the Multicopter manufacturer, is the combination of our **MikroKopter** with thermography solutions from Optris and Flir more than logical. In this field of application the **MikroKopter** provides completely new perspectives

Application areas

- > Inspections of photovoltaic installations
- > Inspections of industrial facilities
- > Heat efficiency analyzes of buildings
- > to support rescue missions
- > Wild animal rescue



The MK8-3500 Agrar

Precision Farming

The MK8 observes an Agricultural area

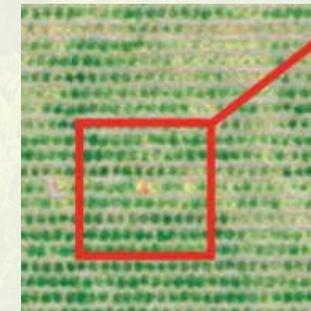
The analysis of cultivated fields are nowadays done with computerized systems by the farmer. The analysis of fields from the air with multispectral cameras is becoming increasingly important. In this way it is i.e. possible to detect a plant infestation very early.

For this the Near Infrared Range (NIR) measures the reflectivity of the green light spectrum. With a special software everybody can analyze the condition of their plants.

Application areas

- > targeted actions against pests
- > efficient fertilizer deploy (economic, prevent over-fertilization)
- > Analyse the vitality of plants (multispectral cameras)
- > Optimization of fertilizer application
- > Shedding of parasitic wasps for pest
- > Visual inspection of areas (FPV camera)

Planing waypoints using our software on a Netbook/Tablet is very flexible and easy to do.



The MK8-3500 Geo

All-In-One solution in the field of surveying and geodesy

Achieving the necessary amount of points with conventional methods of geodesy and object surveying is only possible with enormous efforts of personell expenses and cost. Furthermore there are also risks to personnel and material.

Our **MK8** takes the relevant data in mid-air high above the ground, which makes it possible to effortlessly survey even hard to reach objects. Our solution guarantees an **extremely high ground resolution** in the range of just few millimeters per pixel.

The point clouds generated with the **MK8-3500 Geo** and the appropriate software reveal the volume of the desired areas.

Application areas

- > Creation of large-scale orthofotos
- > Generation of detailed height and volume models
- > Creation of 3D models
- > Land surveying and cartography



Equipment of the MK8-3500



Ground station

The ground station is a transmitter from Graupner. Incl. Special transmitter console, live image monitor and real-time telemetry with voice output.

Charging technology

With the Polaron charging station, 2 batteries can be charged simultaneously. Part of the **MK8-3500 standard** are 4 high-performance 6S 4500 mAh lithium polymer flight batteries.



Gimbal MK HiSight SLR1

The SLR1: Lightweight, universal camera gimbal for larger SLR cameras. The camera can be compensated by tilt servos in pitch and roll direction.

Hot shoe adapter

A module to store exact time and position of a photo.

These data is important if the drone is to be used in the photogrammetry sector.



Transport case

Robust, compact and easy to handle: the clever design of the transport case offers comfort and style with high stability at dimensions of 740 x 620 x 410mm.

Analog video transmission

5.8 Ghz Video RX / TX solution for live image transmission including monitor and battery.



Optional accessories



Camera Gimbals

Depending on the payload of the used drone, different photo, video, thermal imaging cameras, etc. can be used. Depending on the camera type we offer different gimbal solutions.

Camera Integration

We support a wide range of cameras and are also convinced to meet your requirements in this area, whether a special trigger solution or a gimbal is needed.



HD video transmission

The Amimon CONNEX is the brand-new high-end high-performance system for latency-free Full HD image transmission. With the light air unit, CONNEX is the perfect setup for professional use.

Netbook Acer Switch 10

The Acer Switch 10 combines all the advantages of a netbook with the user-friendliness and mobility of a tablet. Plan complex waypoint routes or configure the drone with our software directly on site!



Training

We offer various possibilities to familiarize you with our drone solutions: From Aerosim simulation software to complex training sessions in our company.

Training drone „Quadro XL“

Our Training drone, the Quadro XL, uses the same electronics as the MK8, so it is perfect for practice flights. The simple but effective frame construction is robust and easy to maintain.



Chilean Plateau

Reliability even in extreme heights

The Chilean filmmakers Company Octocam is working successfully for years with drones based on **MikroKopter** technology. Even under the most adverse conditions they succeed breathtaking filmings in the rough areas of the Chilean Plateau.



Powered by HiSystems:

On behalf of the Federal Highway Research Institute, the **Fraunhofer Institute**, in cooperation with Company **Airclip** developed a flight robot which can analyze permanently overtakings. On this occasion it came to an daily airtime of **about 9 hours**.



Search & Rescue

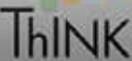
Life rescue from the air

Through image transfer in real time and high-resolution cameras with zoom functions **MikroKopter** will be used in finding missing people.

Antarctic

Reliability in harsh areas

The Thuringian Institute for Sustainability and Climate Protection examines on the 15.000 kilometer far away King George Island research on changes in penguin-populations, commissioned by the Federal Environment Agency.



Wild life

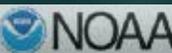
Wildlife photography in Africa

With the **MikroKopter** shootings from a low altitude is possible without scaring the animals. The wildlife photographer **Benny Rebel** demonstrates this very impressive during a shooting in Africa.

Animal research

Whale research in the Pacific

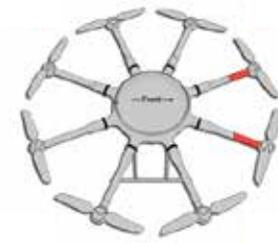
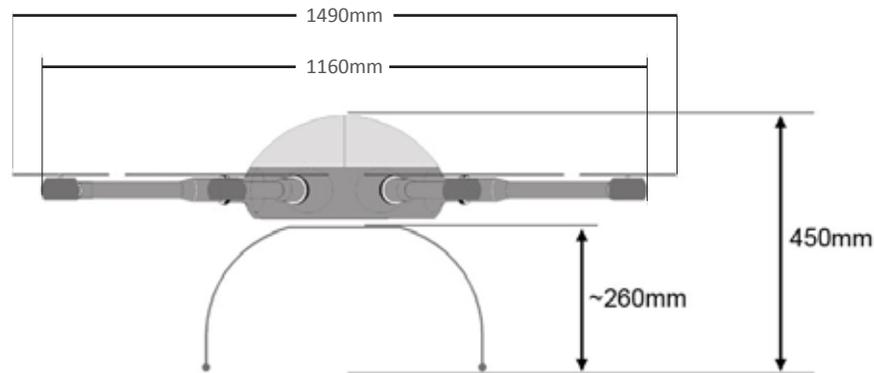
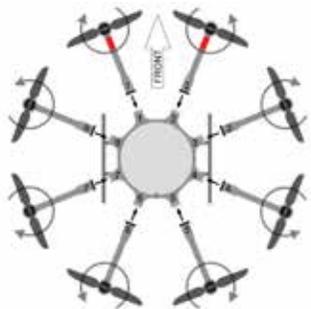
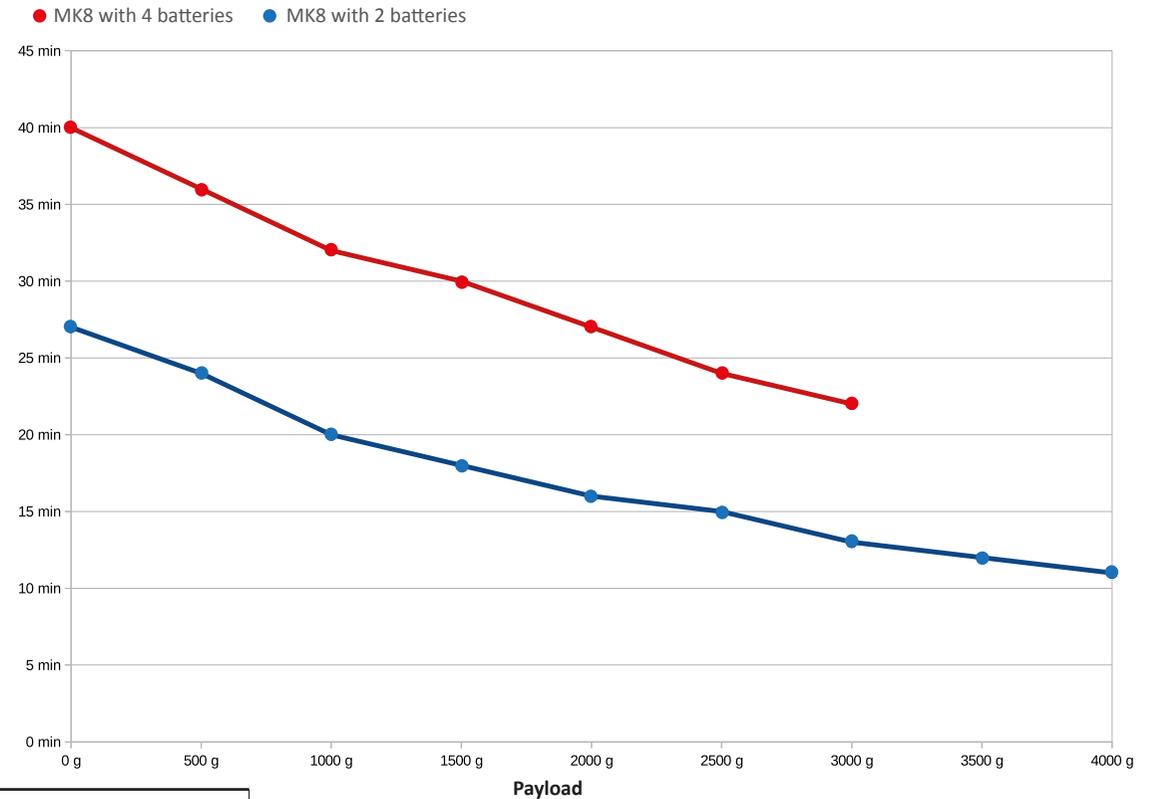
A drone, equipped with **MikroKopter** Technology, is for the **NOAA** (Weather- and Oceanography Agency of the USA) in collaboration with the Vancouver Aquarium in use for the research of whales.



Technical specifications

model designation	MK8-3500 Standard
base weight incl. 2 batteries	4350g
weight incl. 2 batteries & SLR1 gimbal	4595g
weight incl. 4 batteries	5652g
weight incl. 4 batteries & SLR2 Gimbal	5897g
max. payload with 4 Lipos	3500g
max. payload with 2 Lipos	2000g
Drive	8 single driven brushless motors (Type: MK4008/350) (with 16" CFK propellers)
Dimensions MK8-3500	aprox. 1085mm x 1160mm x 450mm
Dimensions transport case	aprox. 700mm x 600mm x 400mm
Flight time	up to 40 minutes (incl. Gimbal & 4 batteries)
Range	Depending on the used transmitter / receiver (Range Graupner Transmitter incl. receiver GR-16 = 4km)
Altitude	up to 5000m above sea level
Operating temperature range	-5°C to +40°C Batteries loses performance in cold weather performance. The flight time can be reduced accordingly.
Recommended max. Wind speed	up to 3 Beaufort Copter is airworthy up to 6 Beaufort (requires enhanced flight skills)
camera mount	MK HiSight SLR1, 2 axis (Nick & Roll), Servogimbal
battery	High current lithium polymer battery, 4500mAh, 6S

Flight times





HiSystems GmbH
Flachsmeerstr. 2
26802 Moormerland
Deutschland

Phone: +49 4954 8932 520
FAX: +49 4954 8932 519
Email: contact@hisystems.de
Mikrokoetter.de