

SENSYS

Sensorik & Systemtechnologie

SENSYS® drone survey kit MagDrone IV



Applications

- Surveying
- Exploration
- Detection
- Surveillance

Features

- 4x FGM3D sensors
- 200 Hz sampling rate
- Data logger temperature calibrated
- Measurement data time stamped
- Own power supply
- Integrated DGPS
- Integrated data downlink
- Recording and processing software

The MagDrone IV is a portable magnetometer survey kit to be attachable to any drone with a minimum payload of 1.5 kg.

The kit consists of an ultra light weight sensor tube with four built-in 3-axis Fluxgates, data logger with internal SD card and rechargeable batteries as well as an own DGPS solution. It is made and optimized for small and mid size survey drones that are shaped for less payload and longer flight times.

Depending on capabilities of the drone in terms of maneuverability and GPS precision, the MagDrone IV survey kit can be used for general purpose surveys, science related magnetic cartographies, exploration studies on hidden minerals, as well as for safety relevant operations. Those can include area scanning for bombs

and ammunition, as well as preventive surveillance of areas and camps against intrusion.

The frame ensures an easy attachment to any kind of drone by screwing, strapping or bonding both together.

The data logger is remotely controllable and provides life data during the survey on a tablet. Afterwards the data can be further processed i.e. using SENSYS software MAGNETO®, GIS tools or Matlab for own scripting.

Note: *The drone itself is not part of the standard package.*

Technical Data MagDrone IV

General Technical Data

Power Supply	24 V; Li-Ion re-chargeable battery
Operating Temperature	-20°C to +50°C
Operating Weight (survey kit)	1.5 kg
Overall power consumption	12W (@24V)*
Size sensor tube (W x D x H)	1500 x 30 mm

FGM3D/75 Fluxgate

Number of sensors	4 pieces, laid horizontal, parallel
Specified measurement range	±75,000 nT

Datalogger

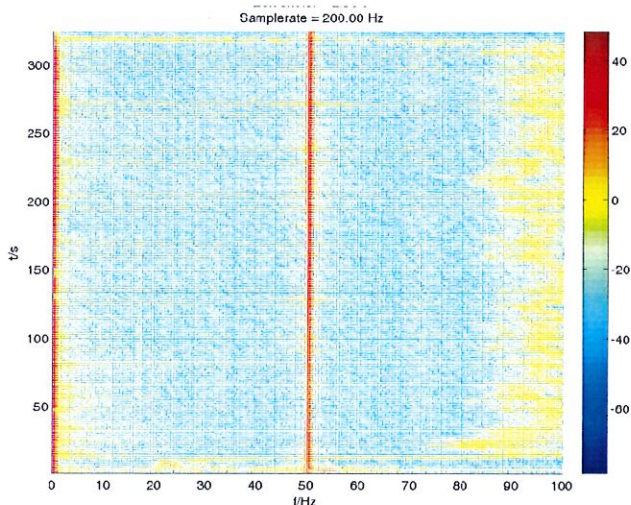
Data transfer	Via WLAN bridge (up to 500m range)
Storage device	Win OS tablet
Data acquisition software	SENSYS MonMX
Sampling rate	200Hz

RTK DGPS

Rover DGPS	Antenna, receiver, radio modem part of survey kit at drone (rover)
Base DGPS	Micro ground base station with antenna, receiver, radio modem and batteries

Standard package

Rugged case (W x D x H)	tbd
MagDrone IV	Sensor frame, 4 built-in FGM3D/75 sensors, batteries, data link module, RTK DGPS kit
Peripherals	Tablet
Documentation	Certificate, manual, quick guide
PC software	SENSYS MonMX SENSYS MAGNETO (optional)



Do the UAV rotors interfere?

As seen left, the magnetic spectrum analysis while Fluxgates attached to a starting and flying Octocopter illustrate that the rotors (when started) operate in frequencies ranges usually above 70 to 80 Hz. While the public net frequency is at 50 or 60 Hz; aimed objects in the ground normally appear in the lower part of the frequency band (0-20Hz).