

Professional intelligent high-precision drone

ATD100

Features

- Intelligent battery, safe and reliable, one-key to check the power, battery fault self-check; Fast speed, each sampling time < 10 ms
- The control system adopts dual redundant sensor design.
- Laser altitude determination and positioning to ensure the accuracy and stability.
- Radar obstacle avoidance module
- Battery life 60 minutes

Application

- Oil and gas pipeline field
- River and rail field
- Telecommunications and public safety field
- Agricultural field
- Solar field

Description

ATD100 is Optosky's latest drone platform, which can be used in various scenarios such as search and rescue, inspection, security and so on.

It's small enough to be carried in one hand. Intelligent battery management system to support long-term, continuous missions.

ATD100 can be unfolded in just 1 minute. It can be taken with you when folded. The battery life is up to 60 minutes, and the measurement accuracy is better than 2cm.

Model	Description
ATD100	Professional intelligent long endurance high-precision flow measurement drone





1.Performance

Model & Parameters	ATD100
GPS accuracy	Horizontal: ± 5 cm Vertical: ± 10 cm
Maximum speed	Maximum Speed 21 m/s forward – 20 m/s backward and laterall Wind Resistance 16 m/s during Flight & 14 m/s during Take-off and Landing
WEIGHT	Max Load Weight: 1.5 kg Weight with Battery: 3.5kg Max Takeoff Weight: 5kg
Max Practical Ceiling above Sea Level	5000m
MAX Speed	20m/s
MAX Angular Velocity	300°/s
Hovering Time	No Payloads 70 min
	1.5kg Payloads 35 min
MAX Fly Height	6500m
MAX Transmission Distance	20 km
Size	Folded size $\leq 52\text{cm} \times 23\text{cm} \times 14\text{cm}$, unfolded size $\leq 53.5\text{cm} \times 52.4\text{cm} \times 26\text{cm}$, motor wheelbase $\leq 685\text{mm}$.

2. Advantage

1. Quick release folding structure

The whole machine adopts a quick release and folding integrated structure, and the weight of the bare machine is 1.8kg. Quick response within one minute.

2. Dual frequency differential antenna

Under complex conditions, it can guarantee flight safety, anti-jamming and steering precision at the same time.

3. Enclosed dustproof motor

High-flow air intake cooling structure, lightweight motor base, high-frequency filter motor system, and high-precision dynamic balance motor.

4. Smart battery

Through the automatic control of the data communication link, the dynamic charge and discharge of the battery can be realized independently, and the voltage load can be balanced.

5. Drone Transport Box

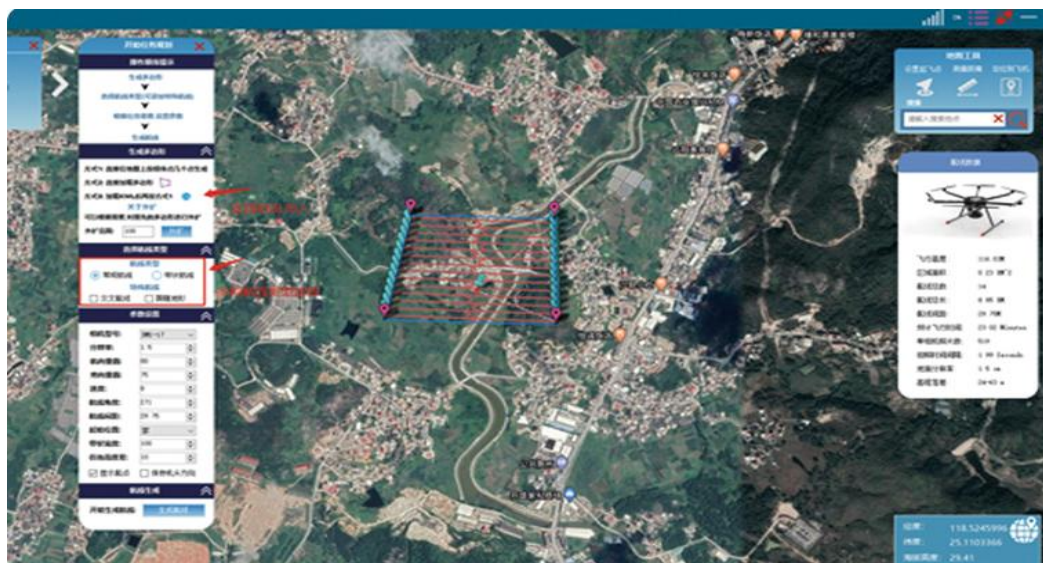
6. Waterproof Drone Portable Storage Bag

3. Product parameters

- Size: height 22cm*width 52cm*length 52.5cm (expanded); height 14cm*width 23cm*length 52cm (storage).
- Endurance time: standard load operation time 57 minutes; no-load endurance time 81 minutes.
- Measurement and control radius: $\geq 10\text{KM}$.
- Minimum take-off and landing range: 05Mx0.5M.
- Differential mode: standard PPK/RTK/GNSS module multi-redundant positioning solution.
- You can customize the no-fly zone.
- Software upgrade can support OTA or CD upgrade.

4. Software Function

1. The section shape can be established by manually inputting coordinates for description, or the TXT text of the river section coordinates can be directly imported into the software, and the section shape can be generated through the system;
2. Visually display the section diagram, vertical flow velocity distribution and applicable water depth of each vertical line;
3. Calculate the flow in real time, and output the flow calculation table and the corresponding water level calculation table;
4. Calculate the average water depth of the monitoring section;
5. With flow modification function;
6. It can export the flow calculation result table that conforms to the international standard "River Flow Test Specification" and the departmental regulations "Hydrological Cableway Test Specification".



5. Application of UAV technology in water conservancy

Combined with the acceleration of water conservancy information construction, drones can strongly support water conservancy planning, construction, monitoring and management. It has great application prospects in the field of water management, including water area planning, water conservancy monitoring, and water conservancy management. River direction, reservoir monitoring, floodplain inspection, etc., can also check water damage bridges, submerged areas, etc., so that the drone aerial photography system has a broader application prospect in the water conservancy industry.

5.1 Water quality sampling test

UAV stability, accurate positioning, flexible takeoff and landing, high safety. Can be equipped with water container and pumping device. According to the matching location information point, after flying to the center of the lake, take water in the air two meters above the lake. The work efficiency is high, and the water quality problems of the lake can be discovered in time.



5.2 Hydrometry

.By measuring the water depth and flow velocity and the configuration of the internal section of the equipment, the flow velocity of the section can be calculated. Microwave radar is not affected by temperature, air pressure, air density, wind or other meteorological environmental conditions, and is easy to maintain and easy to use. In addition, the monitoring system can measure the water flow of natural rivers, urban canals, canals, culverts, and pipe sections based on the flow velocity values obtained from detection (multi-point measurement) and the shape information of the river.

5.3 Dynamic monitoring of water environment

Drones monitor the river to detect changes in the river. Based on the mastered river basic data, a management system such as water area survey and water area statistics will be established. Realize the informatization of water area management to meet the needs of water area management, social and economic development and watershed management. Use the results of river monitoring to establish data on changes in water areas and illegal occupation of water areas to provide a basis for water management.