110*145mm

Operation Guide for Tethered Ground Station

Designed for Long-Endurance Drone Operations

This tethered power system enables multirotor drones to fly continuously for 24 hours. The system provides stable power transfer to the drone via the tether, meeting the requirements for extended flight times. At the same time, the tether ensures a secure connection between the drone and the ground station, offering safe and controlled flight.

When the power is on, to prevent accidents, do not touch the tether with bare hands at any time. If it is necessary to handle the tether while energized, always wear insulating gloves (insulation rating above 1000V). Please pay attention to electrical safety.

✖ Operation Warnings

1. This device should not be used during heavy rain, as the cable may become conductive, potentially causing damage and safety hazards.
2. The ground station must be placed on flat, open ground, and kept at least 10 meters away from the drone.
3. Cable retrieval speed is controlled by the gear setting. Ensure the tether maintains proper tension during retraction to prevent the cable from dragging the drone and causing instability.
4. Do not directly touch the cable when the power is on.
5. Do not directly touch the cable during the retraction or deployment process.
6. Never block the exhaust vents. Open the viewing window for ventilation in hot weather.
7. The drone should be equipped with a battery for flight, in case of power failure.
8. When the overheat warning sounds, land the drone as soon as possible.
9. Do not modify system components or software settings. Any unauthorized changes are at your own risk.

The Ground Station User Interface Includes the Following Controls

Main Power Input
The power input should be connected to 220V~50Hz/60Hz 16A. Ensure the wiring is correct. In case of emergency, disconnect the main power supply.

Safety Power On/Off
When turned on, the ground station will start operating. However, to ensure user safety, the system will not provide power to the drone.

Drone Power Switch
Press and hold for 3 seconds to turn on the drone power. Hold again for 3 seconds to turn it off. If an alarm occurs, press once to cancel.

Tether Retract Control
Controls the tension for retracting the tether.

Viewing Window
Displays the status of the tether.

Red Alarm Light
Flashing red light and buzzer alert the user to a warning.

Drone Power Indicator
The green light indicates that drone power is on.

⟩⟩⟩ Takeoff Preparation

1. Secure the tethered aerial power supply, connect all wiring, and fix the tether.
2. Connect AC power, turn on the circuit breaker, and wait for the system to perform a self-check and boot up.
3. Turn on the remote controller, power on the drone, and press and hold the drone power switch on the tethered ground station to turn on the drone power.

⟩⟩⟩ During Flight

4. Take off the drone, and it will tow the tether.

⚠ Note: Do not block the intake and exhaust vents while the system is operating.

5. When the tether reaches the warning length, an alarm will be triggered (press the power switch briefly to cancel the alarm). Do not fly higher; if necessary, lower the drone's altitude.

⚠ Note: If needed, monitor the remaining tether length through the viewing window.

⟩⟩⟩ Landing

6. Adjust the winch control while lowering the drone to retract the tether. The tether will automatically adjust based on the drone's pull and altitude at slower speeds.

⚠ Note: Monitor the tension of the tether. When the drone is descending, ensure the tether is not too tight.

7. When the drone is close to the ground, turn off the winch control and return it to zero, then land the drone.

⚠ Note: Do not touch the tether before turning off the drone power switch. A damaged tether may cause electric shock.

8. Press and hold the drone power switch to turn off the drone power on the ground station. The green light will turn off, and the voltage display will show 'Power Off.' The voltage of the tether will disappear within a few seconds.

⚠ Note: Disconnect all connections after turning off the ground station power.

9. Retract the remaining tether before turning off the main switch. Disconnect the drone from the onboard power supply and disconnect the tether from the onboard power.