Product Manual

TP-T8



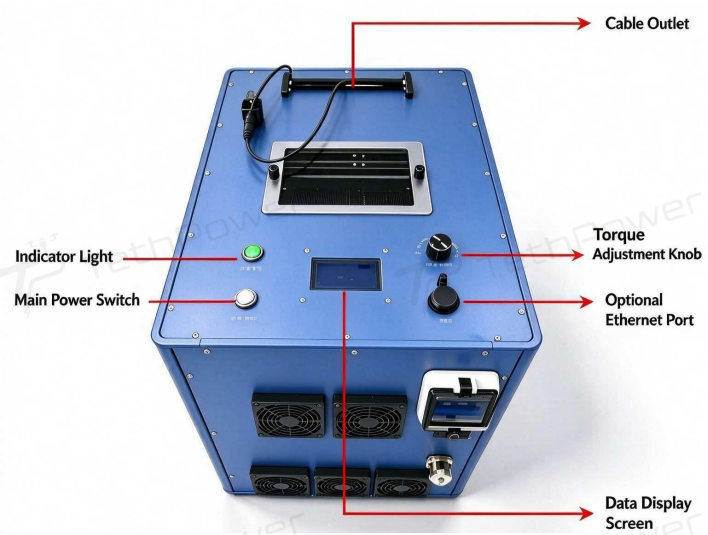
TP-T8 Tethered System Overview

Our TP-T8 ground power station integrates a ground power supply, tether cable and reel winch. It provides wired power and passive cable payout / active retrieval for tethered UAVs. The winch assembly includes the enclosure, main frame, cable drum and control circuitry.

Our TP-T8 provides rated 8 kW output continuously. The recommended onboard power of ≤8 kW accounts for losses. Fiber in the tether cable with FC or SC connectors and network-port modifications are optional and arranged to your requirements.

Key Technical Specifications

No.	Item	Technical Specifications
1	Main Enclosure Dimensions	472 × 377 × 453 mm (L × W × H)
2	Enclosure with Handle & Control Panel Dimensions	500 × 410 × 470 mm (L × W × H)
3	Single Cable Length	120 m
4	Weight	36.5 kg ± 0.5 kg
5	External Power Supply	380 VAC
6	Maximum Cable Retrieval Speed	⩽2 m/s
7	Operating Modes	Passive payout / Active retrieval
8	Power Output Voltage	750 VDC
9	Rated Output Power	8 kW
10	Recommended Onboard Power	≤8 kW



Button Descriptions	Main Power Switch / Torque Adjustment Knob	Start/stop high-voltage DC output/Start/stop cable retraction
System Operation Interface Description	After turning on the main circuit breaker (AC circuit breaker): 1. On the system operation interface, rotate the torque adjustment knob clockwise to start automatic cable retraction. To stop automatic retraction, rotate the torque knob counterclockwise. 2. The main power switch enables the high-voltage output and turns the warning indicator green. Enable it at the point specified in the flight sequence below.	

1. When using the TP-T8 tethered ground power box, it requires a three-phase AC power supply. During normal operation, the onboard power supply must be installed on the UAV.





2. Connect the tether cable output end to the UAV onboard power supply. Secure the load-bearing hook onto the load-bearing plate. The ground power box's high-voltage DC output uses an XT90 connector, which connects via the cable to the UAV onboard power module as shown below. Ensure the load-bearing hook is firmly fixed (the hook bears the mechanical tension of the cable).





Operating Controls and Flight Sequence

1) Before use, connect the tether cable to the UAV onboard power module, then install the UAV lithium battery. Set the torque knob to minimum and switch on the ground-station circuit breaker to power the control panel. Keep the high-voltage output off.
2) Unlock the UAV and take off to approximately 5 m above ground. Then use the Main Power Switch to enable the TP-T8 750 VDC output, and continue ascending.
3) For landing, descend to approximately 5 m above ground. Switch off the TP-T8 750 VDC output, then land the UAV on the ground.
4) The torque adjustment knob controls retraction torque. Set and adjust cable tension for the aircraft and site. Switch off the main circuit breaker before unplugging the AC power cable.

When high-voltage output is enabled, the cooling fans run, the Main Power Active indicator is green, and the display shows tether output voltage, current and power. When load current is detected, the indicator changes to a breathing flash.

Product Maintenance

1. Storage & Transport

1.1. Before transport or storage, always remove the airborne tether power module and UAV battery from the UAV and store them separately. Never store UAV batteries near heat sources or flammable/explosive materials.

1.2. Keep the storage environment dry; do not place UAV batteries in areas prone to water leakage or humidity.

1.3. If storing the tethered system for more than three months, recommended storage temperature is 22°C to 28°C. Never store the equipment or batteries below -10°C or above 45°C.

1.4. If the UAV battery is unused for more than 10 days, discharge it to 40%–65% for optimal storage. Never store it fully discharged to avoid over-discharge damage, which can make the battery unusable. It is recommended to cycle charge/discharge every 2–3 months to maintain battery activity.

1.5. When transporting the tethered power box, proper shock-proof measures must be applied. Slight loosening of internal screws due to vibration during transport is considered normal.

2. Maintenance

After every 50 takeoff-and-landing cycles or every 20 hours of operation, inspect and maintain the tether power system to ensure proper function.

- Check whether any part has suffered strong impact.
- Inspect whether moving parts still operate smoothly.

Supplied Equipment and Options

Standard supplied items are the TP-T8 ground station, AC input power cable, insulating rubber gloves, manual crank and transport flight case. Standard tether length is 120 m. Customized cable with fiber using FC or SC connectors and network-port modifications are optional.