

TP-T36



1. System Overview

The TP-T36 tethering system primarily consists of a reel-and-unroll winch, a tethering enclosure, integrated tethering cables, and an integrated ground power supply; it provides tethered UAVs with wired power supply, data transmission, and cable reel/unroll functionality. The reel-and-unroll winch mainly comprises a system enclosure, a main frame, a cable storage reel, and a control circuit.

1.1 Main Technical Specifications

order number	project	technical parameter
1	System cabinet main dimensions	768 mm × 615 mm × 692 mm (Length × Width × Height)
2	Single-cable length	120m
3	weight	95±3kg
4	External power supply	AC380V
5	Maximum closing speed	Not less than 2 m/s
6	work pattern	Passive unwinding/active winding
7	Power supply output voltage	DC1500V
8	Power supply output rated power	36kW
9	Recommended airborne power supply rating	≤36kW

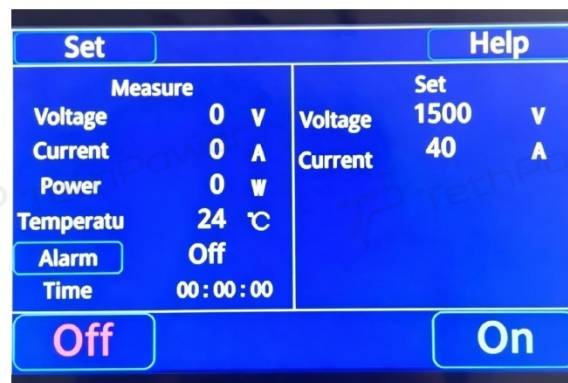


1.2 User Instructions

1.2.1 Fixed Container Panel Instructions:

- 1) Main power circuit breaker: The main power switch for the entire system, including the main power supply for the tethered power box and the tethered winch box;
- 2) LCD Setting Button (SET): Used to set the system output voltage and current values; the password is 888888. The voltage setting range is 1000–1500 V; the current setting range is 30–60 A. The manufacturer's default output values are 1400 V and 40 A. It is not recommended to modify these parameters; if you need to make changes, please contact the manufacturer for assistance. Failure to do so may cause the power supply or other equipment to burn out.
- 3) LCD Information Panel (Measue)
 - ◆ LCD Display Voltage (Voltage): Displays the current power supply output voltage value.
 - ◆ LCD Current Value (Current): Displays the current power supply output current value.

- ◆ LCD Display Power Value (Power): Displays the current power output value.
 - ◆ LCD Display Temperature (Temperature): Displays the current internal power supply temperature; if this temperature exceeds 65°C, the device should be used with a reduced rating.
- 4) LCD Information Panel (Set)
- ◆ LCD display voltage value (Voltage): Displays the tethered configuration output voltage value.
 - ◆ LCD current value (Current): Displays the tethered configuration output current value.
- 5) LCD Help Button
- You can configure a Chinese/English language switch; for detailed instructions, please consult the manufacturer's setup guide.
- 6) LCD power supply's "On" button: When pressed, the power supply unit outputs power according to the set voltage value; the rated current shall not exceed the set current.
- 7) LCD power off button (Off): Pressing this button turns off the power supply; no power output will be available.
- 8)



1.3.2 Wiring Instructions

- 1) Connect the supplied power cable – either from the mains or from a generator – to the tethered box; one end of the aviation plug should be connected directly to the tethered box's aviation socket, while the other end can be connected directly to the mains or to a generator;
- 2)



- 2) The high-voltage cable for the tethered payload terminates at an XT90 connector; connect this cable to the drone's onboard power supply (as shown in the figure below), and securely fasten the load-bearing hook (which will be subjected to force via its tether).



1.3.3 Operating Instructions

- 1) During operation, first set the torque adjustment knob to the lowest position, then close the power switch to power on the system; at this point, the display panel will light up;
- 2) When power is needed for the drone, press the LCD "On" button; the tethered box's cooling fan will then start operating, and the display will show the current output voltage, current, and power of the main cable supply.
- 3) When the drone is ready to take off, set the torque knob to the lowest setting or apply a slight torque (in windy conditions); then pull the cable out using the drone. During cable retraction, adjust the torque knob from low to high while simultaneously reducing the drone's descent speed; alternatively, set the torque to an appropriate level from the outset to maintain a constant cable tension throughout the operation. When deploying the cable, use the drone to pull the cable forcefully and maintain a hover position; during landing, the cable will automatically retract as it is under tension.
- 4) Upon completion of the task, first turn off the main power supply and press the LCD "Off" button to disconnect the high-voltage DC power; then perform the remaining cable retraction operation to prevent accidental electric shock; finally, turn off the main power switch and unplug the power cord.

6. Precautions

- 1) Before use, please level the device and place it on a flat surface to ensure a relatively balanced position;
- 2) Operators must wear insulating gloves to prevent accidental electric shock;
- 3) When adjusting the speed control knob, turn it slowly from the smallest position to the largest; do not abruptly set it to the maximum position;
- 4) After completing the charging or discharging process, coil the power cord neatly and store it inside the box; do not drag it across the floor.
- 5) During use, do not drag the tethered cable across the ground to prevent it from becoming frayed; also, check the ground for any stones or other sharp objects that could cut the cable.