

# Tethered Power System for Drone

User Manual

M series



# CONTENTS

<i>Contents</i>	<i>2</i>
<i>Read The Instructions</i>	<i>3</i>
<i>General use</i>	<i>3</i>
<i>Open the box</i>	<i>3</i>
<i>Product list</i>	<i>4</i>
<i>Before use</i>	<i>6</i>
<i>Taking off</i>	<i>6</i>
<i>Landing</i>	<i>6</i>
<i>Transportation</i>	<i>8</i>
<i>Operation warnings</i>	<i>8</i>
<i>Technical data</i>	<i>9</i>

## Read The Instructions

- It is recommended to watch all tutorial videos on the official website and read the Safety Guidelines before first time use. Prepare for your first flight by reviewing the User Manual for more details.

## General use

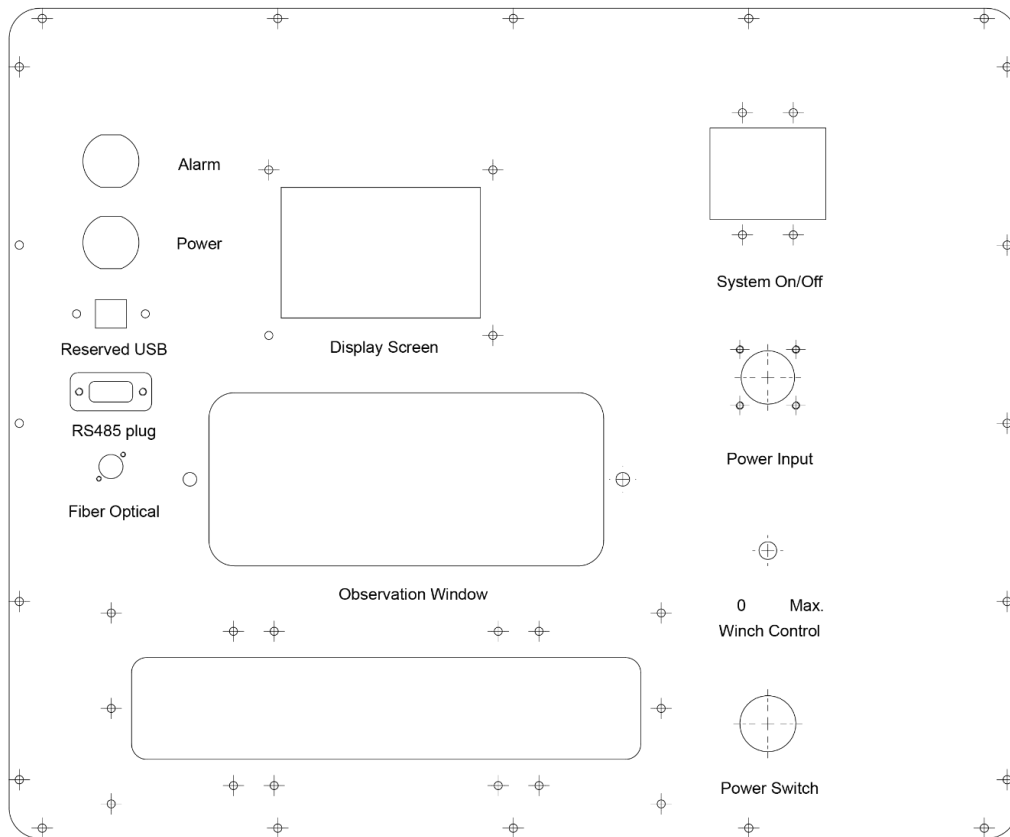
M series is a rugged tethering station for multirotor drones. This compact and robust solution enables the transmission of power from an external ground power supply unit to the drone through the micro-tether. The aramid core of the micro-tether ensures the drone remains attached to the base station providing a safe phase of flight.

## Open the box

- 1 x M series All-in-one base station
- 1 x Air-borne Ultra-light DC converter
- 1 x AC input cable



# Product list

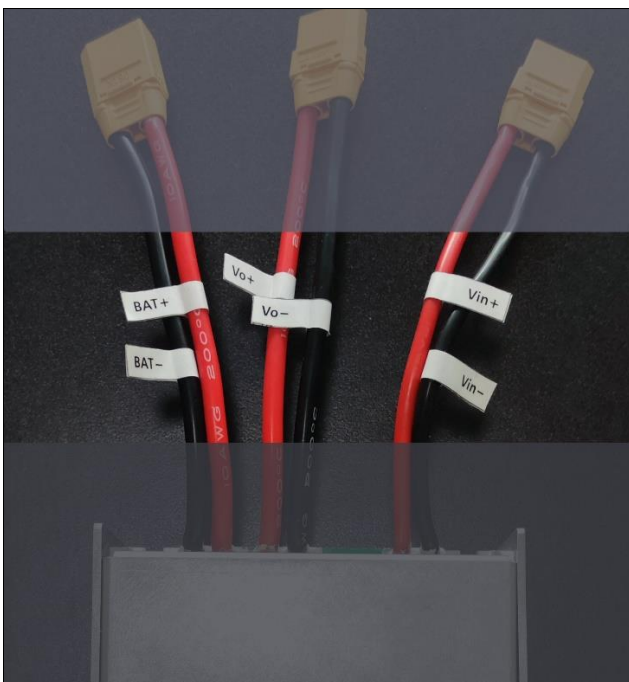


The ground station user interface includes below controls.

- 1) **Power Input:** The power input should be connected to 220V~50Hz. An emergency, unplugging the cable can cut the power supply to the station.
- 2) **Safety On/Off (Anti-electric shock):** When it is activated, the station will work but NO power is to the cable to secure the safety of users.
- 3) **Power Switch:** ON- power to the cable. OFF- power off the cable.
  - Long press 3s to power on.
  - Long press 3s to power off.
  - 1s press to release the alarm.

*Attention. Serious injury could occur if the micro-tether is manipulated once the power is switched ON.*

- 4) **Winch Control:** It can control the winching speed of the tether.
- 5) **Fiber Optical:** It can be used to transfer data with the drone.
- 6) **Alarm (Red):** The buzzer alerts the user to an alarm.
- 7) **Power (Green):** When this green light is on, the power is transferred to the cable.
- 8) **Observation Window:** To observe the status of tether cable. It can be open up if the environment temperature is above 35 °C.
- 9) **Display Screen:** To display information such as, current, voltage, temperature, cable length released.
- 10) **Airborne DC-DC converter**



**BAT+ / BAT-:**

Contact this to airborne battery as backup power supply

**Vo+ / Vo-:**

12S DC output which is connected to UAV

**Vin+ / Vin-:**

400V DC input from base station

## Before use

1. Open the base station cover. Connect the cable to the airborne power supply.
2. Connect the airborne power supply with the drone.
3. Adjust the winch control to the "0" position.

---

*Attention. Please start the generator and wait for 3~5 minutes.*

---

## Taking off

4. Turn on the System On/Off on the base station, the screen will automatically turn on.
5. Long press and turn on the Power Switch. The system will automatically be ready in few seconds. The green light will be illuminated to indicate the tether power is on.

---

*Attention. Please watch the green light on during the drone is hovering. If the green light is off, it means the tether power is off. The drone is powered by the battery now.*

---

6. Take off the drone manually and slowly and it will automatically pull out the cable.

---

*Attention. Please take off the drone slowly in case of pulling the tether too hard. It may cause unbalance of drone and drop-down may occur.*

---

7. When the cable reaches the limit length, the alarm will be triggered (press the power switch, the alarm will be cancelled). Do not fly higher. Lower the drone.

---

*Attention. Watch the tether through the observation window.*

---

## Landing

8. Lower the drone and adjust the Winch Control at the same time to retract the cable.

*Attention. Watch the tension of the tether. Keep the tether not too tight in case of drop-down of the drone.*

---

9. Land the drone to the ground, then turn it off.

---

*Attention. Do not touch the tether before the power switch is turned off. Electric shock may occur if the tether is broken.*

---

10. Long press and turn off the Power Switch on the base station.

11. Disconnect the airborne power supply from the drone.

12. Disconnect the cable from the airborne power supply and get the cable into the base station.

13. Turn off the System On/Off.

## Transportation

No bumping and water entering during the transportation of this equipment. It must be packed in aviation aluminum box during transportation or take damping treatment, or the warranty does not cover.

## Operation warnings

1. This device cannot work on rainy days, otherwise the cable will conduct electricity and may be broken.
2. Put the base station in open flat ground and leave at least 10m distance away from the aircraft.
3. The cable pulling speed is controlled by winch control. When releasing/pulling the cable, you must keep the cable in a suitable tension to prevent winching and pulling the aircraft.
4. No touching the cable directly when the power is on.
5. No touching the cable directly when it is moving.
6. Blocking air outlet is strictly prohibited. The observation window can be opened for heat dissipation when hot.
7. The aircraft should be equipped with battery in case of power-off.
8. When the overheating warning is ignited, please withdraw the aircraft and shut down the system in minutes.
9. Do not change the system components/software settings. Any risk caused by unauthorized change will be covered by yourself.



## Technical data

### *M-C3500*

Output	3.6kw max. 12S(48V)
--------	---------------------

Max.Height	110m
------------	------

Cable	Optical
-------	---------

Power balance	Auto
---------------	------

Optical com	Yes
-------------	-----

Anti-shock	Yes
------------	-----

Material	Aluminum
----------	----------

Size	40x30x30cm
------	------------

Weight	22kgs
--------	-------