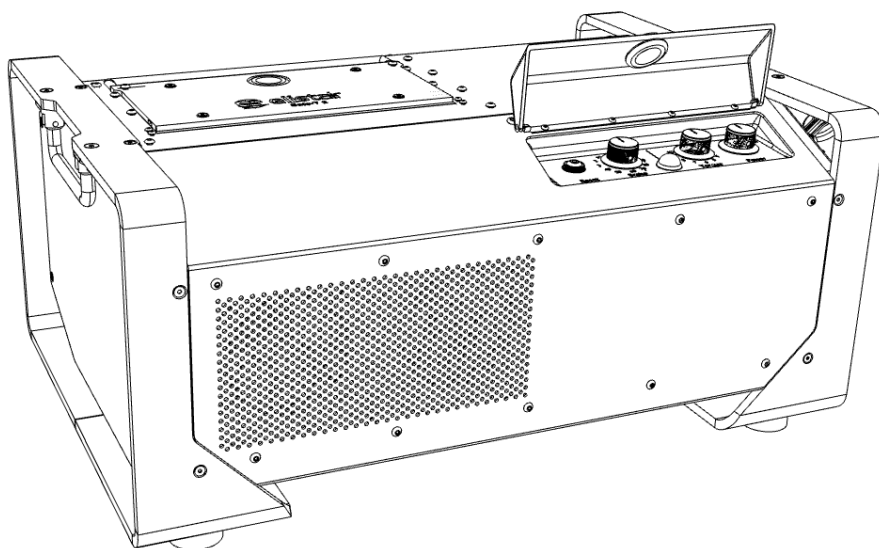


SAFE-T 2

Product Specifications

V2.4



Safe-T 2 – The Tethering Station for All Your Missions

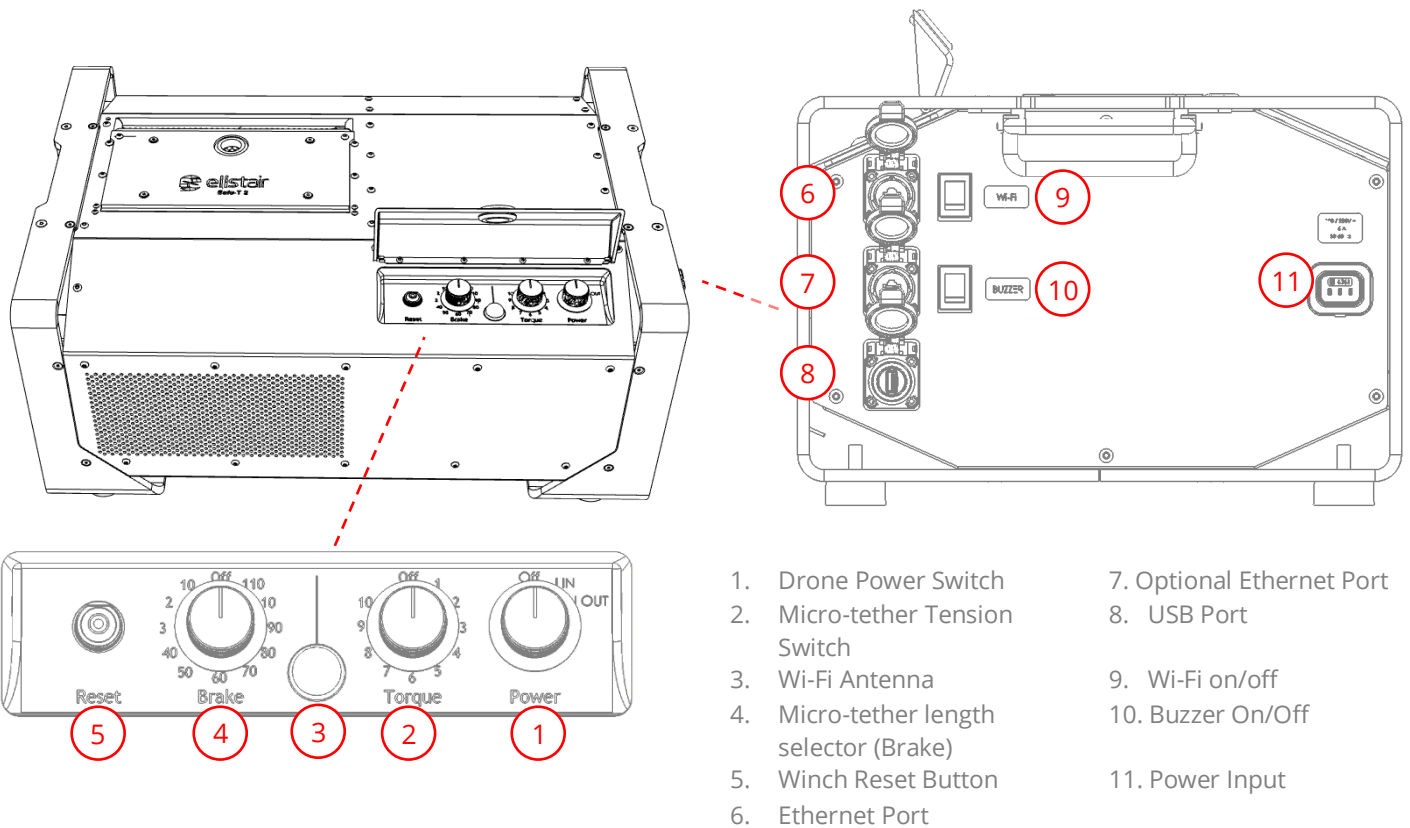
The Safe-T 2 is Elistair’s most advanced tethering system. Built on the success of the flagship Safe-T product line which has been deployed in over 65 countries by governments, industrial groups, and security forces; Safe-T 2 takes tethering operations to a new level. Thanks to its rugged and weather-resistant design, its innovative spooling system, and its patented Dynamic Voltage Optimization (DVO) providing unmatched power efficiency; the Safe-T 2 enables safe and persistent flight time for your UAV.

Safe-T 2 features a new datalink option: the tethered “Dual-Comms”. With the integration of Fiber Optics and BPL datalinks in parallel, you can now benefit from a redundant tethered data link, or you can select which technology is best suited for your aircraft and/or your payload.

With its modular metallic structure, its compact size and optional software development kit; the Safe-T 2 has also been designed for seamless integration into vehicles and fixed structures, whilst also being agile enough for a single operator to deploy.

Thanks to its innovative winch system, the Safe-T 2 can be quickly reconfigured to use the best tether weight/power range for each drone. This means that the operator no longer has to compromise and can choose the best configuration for the job. A patented Brake system also allows the user to adapt the maximal tether length, depending on the safety zone needed around the aircraft, for instance in urban or crowded environments. The Safe-T 2 is compatible with the largest number of drones on the market and users can switch between drones easily by using the Elistair Air Module range.

- Weather-resistant design at IP54 level
- Industry-leading weight/power ratio from our patented DVO (Dynamic Voltage Optimization)
- Up to 130 m / 430 feet of micro-tether
- Secured Dual-Coms Option (Fiber Optics and BPL)
- Safety Brake Option (patented)
- Swappable micro-tether
- Vehicle-Integration kit, including hardware, and software
- Improved spooling capabilities
- IEC 62368 standard

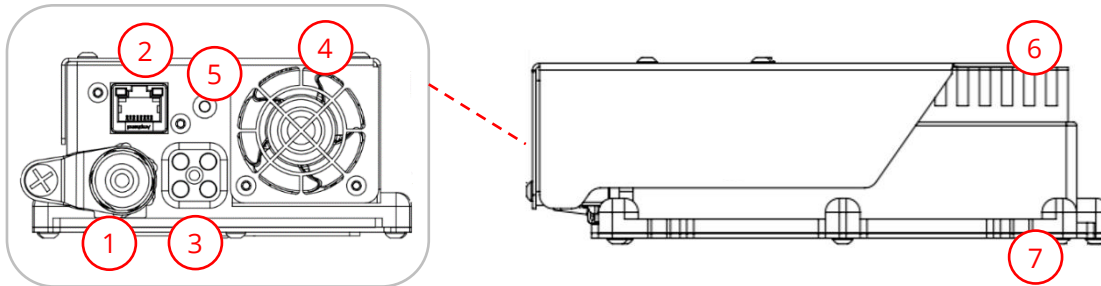


- | | |
|---|---------------------------|
| 1. Drone Power Switch | 7. Optional Ethernet Port |
| 2. Micro-tether Tension Switch | 8. USB Port |
| 3. Wi-Fi Antenna | 9. Wi-Fi on/off |
| 4. Micro-tether length selector (Brake) | 10. Buzzer On/Off |
| 5. Winch Reset Button | 11. Power Input |
| 6. Ethernet Port | |

Air Module

The Safe-T 2 is compatible with Elistair's range of Air Modules¹, providing flexibility and compatibility with a variety of drones. The example below is standard 6S and 12S Air Module with data option.

The Air Module is a key component of the Safe-T system. Miniaturised and ruggedized to fit in standard battery compartments, this compact module delivers a continuous DC power supply to the drone, whilst also providing a failsafe feature with a safety battery system.



1. Micro-tether Connector
2. Ethernet Port
3. Drone connector (AS150 female red and XT150 female black)
Safety Battery connector (XT90 male)
4. Air Vent
5. Air Module LED
6. Metallic Cooling Plate
7. Fixing points

Smart Tether Management System

The Safe-T 2 includes Elistair's intelligent winch software enabling adaptive control of the tether tension and reducing the impact of the tether on the drone's flight. The Micro-tether Tension Switch (9) on the front panel allows the user to adjust the amount of tension depending on the drone, the mission, and the wind. The following protocols are implemented in the Safe-T 2:

- **Reset:** Allows the user to reset the winch system
- **Tangle limitation:** Reduces the spool inertia by increasing the tension of the tether when unwinding
- **Landing Tether Protection:** Stops the tether tension for the last 10 meters of the micro-tether (allowing sufficient tether for a safe landing)
- **Ground tether Reduction:** Improves the rolling system performance which reduces the amount of tether on the ground.

These parameters as well as the alarm triggers can be adjusted with the Developer Option.

¹ Air Modules can be purchased separately from Elistair or official partners.

Specifications

- Safe-T 2**

Dimensions	408x603x261 mm (16x24x11 in) (without feet)
Weight	25 kg (57 lbs)
Power Source Requirements	120 VAC, 50-60 Hz, 2 kW min for power source, 1,2kW output limit 230 VAC, 50-60 Hz, 4 kW min for power source, output limits below
Power Supply Cable	Type E
Built-in protection	Fuse
Micro-tether management	10 pre-sets, smart pre-programmed laws and reset function
Wi-Fi Connectivity	Protocol 802.11 b/g/n, Frequency 2.4G-2.5G (2400M-2483.5M) Encryption WEP/TKIP/AES, Security WPA/WPA2.
Carriage	2 folding handles
Brake	Strength: 36N
Optical Fiber	Configuration with specific micro-tether at 30g/m
Ingress Protection Level	IP54

- Micro-tether configurations (for 230 VAC input)**

	100 m (330 ft)	100 m (330 ft)	100 m (330 ft)	130 m (430 ft)
Length	100 m (330 ft)	100 m (330 ft)	100 m (330 ft)	130 m (430 ft)
Linear Weight	16 g/m	20.5 g/m	25 g/m	20.5 g/m
Total Weight	1600 g	2050 g	2500 g	2570 g
Tensile Strength	150 daN	150 daN	150 daN	150 daN
Diameter	2.4 mm	2.7 mm	2.4 mm	2.7 mm
Max continuous Power	1500 W	1800 W	2200 W	1500 W
Peak Power 10 s	1800 W	2000 W	2400 W	2000 W
Peak Power 3 s	2300 W	2500 W	2800 W	2500 W
Alert	1300 W	1600 W	2400 W	1850 W
Alarm	2300 W	2500 W	2800 W	2500 W
Recommended safety battery	6S 5Ah 35C	6S 8Ah 35C	6S 8Ah 35C	6S 10Ah 35C
Micro-tether Out	50 to 100 m	50 to 100 m	50 to 100 m	85 to 130 m
Operational temperature	-10° to 45° C (14° to 113° F)	-10° to 45° C (14° to 113° F)	-10° to 45° C (14° to 113° F)	-10° to 40° C (14° to 104° F)

Data Option - data speed	80Mb/s minimum (up to 200Mb/s, depends on the packet size)
Data Option - data connectors	Ethernet RJ45 (Air Module and Safe-T)
Developer Option - Remote controls	Control Power, Torque, pre-programmed laws, alarms
Developer Option - Remote telemetry	Displays Power consumption, tether unwound, tether speed, temperature, flight duration

- Air Module (Standard version)**

Dimensions	168x109x54 mm
Weight	700 g
Output Voltage	6S / 24 V (±2 V) or 12S / 48 V (±3 V)
Safety Battery Cable dimension	15 cm
Safety Battery Cable Connector	XT90 Male (to be connected to XT90 female with anti-spark)
Drone Cable dimension	15 cm
Drone Cable Connectors	AS150 RED Female, XT150 Black Female
Recommended Cabling min section	6 mm ² (1200W to 1500W drone power consumption) 10 mm ² (1800W drone power consumption)