TP-FlyCart 200 Tethered Power System



1 System overview

We provide the TP-FlyCart 200 tethered power system for integration with DJI FC200 aircraft. The TP-T-FC200 ground equipment comprises a power supply cabinet and a winch cabinet. The tether carries DC power to two TP-P-FC200 airborne modules. This system operates at 1500 VDC. Extended flight depends on a suitable external AC source, aircraft configuration, battery condition, weather and operating limits.

System configuration and operating conditions

The tethered FC200 configuration uses two aircraft batteries and two TP-P-FC200 airborne power modules. The aircraft has four battery positions; the two airborne modules replace two batteries. All module power, mass and dimensions in this manual refer to one module.

Tethering does not authorize operation in restricted airspace or establish suitability for crowds, explosive atmospheres or other hazardous areas. Plan the operation for the actual site and applicable aircraft limitations.

The ground cabinet accepts three-phase 380 VAC with neutral. A suitable utility supply, generator or energy storage source may provide this input. We confirm the aircraft, nozzle and hose supply scope in your quotation. Photographs and component layouts illustrate the equipment; they do not establish customer deployments, performance tests or the relative physical scale of components.

2 Technical parameters

Aircraft integration configuration

	Parameter	Configuration
	Aircraft platform	DJI FC200
	Aircraft batteries used	2
	Airborne power modules used	2 × TP-P-FC200
	System operating voltage	1500 VDC

TP-FlyCart 200 system components

TP-P-FC200 airborne power module parameters per module

Module values are per unit. The installed configuration uses two airborne modules and two aircraft batteries.

	Parameter	Specification
	Dimensions	376 × 276 × 187 mm (L × W × H)
	Mass	14.5±0.5 kg
	Output power per module	36 kW
	Input voltage	1200–1500 VDC
	Output voltage	58 VDC
TP-P-FC200	Output current	615 A
	Cooling	forced air cooling

TP-T-FC200 ground equipment

Ground cabinet dimensions retain the source order; axis directions are not specified. The 2000 VDC cabinet maximum is not the operating voltage of this system.



Power supply cabinet		Winch cabinet	
			
Cabinet dimensions	820 × 650 × 520 mm	Cabinet dimensions	730 × 610 × 565 mm
Mass	85 kg	Mass	60±2 kg
Input voltage	Three-phase 380 VAC + N	Cable length	Default: 120 m (customizable)
Output voltage	1500–2000 VDC adjustable; system setting 1500 VDC	Rewind speed	≤2 m/s
Output current	30–60 A adjustable; default 50 A	Recovery	Electric/Manual
Operating temperature	−20 to +40 °C	Operating temperature	−20 to +40 °C
Rated output power	75 kW	Cable parameters	Working voltage: 1500 VDC
Maximum output power	85 kW	Cable current	Rated current: 50 A
Cooling	Air-cooled (fan cooling)	Operating temperature	−20 to +40 °C

3 Integration and operating conditions

Configuration and commissioning

Have the aircraft, tether, power equipment and payload integrated and checked for the intended mission. This document provides product specifications and use conditions; flight and emergency sequences must follow the aircraft manufacturer and the verified integration procedure.

Install two TP-P-FC200 airborne modules in place of two of the aircraft batteries. Retain two aircraft batteries. The tethered configuration therefore uses two batteries plus two airborne modules.

Check the retained batteries, mounting and interfaces using the aircraft manufacturer instructions. Confirm battery state and backup behavior during integration before flight.

The TP-T-FC200 power supply cabinet requires three-phase 380 VAC plus neutral. Confirm input capacity, wiring and the power source before operation. The ground cabinet is adjustable from 1500 to 2000 VDC, but this complete system is operated at 1500 VDC; 2000 VDC is the cabinet maximum adjustment and design headroom.

Connect the tether to the TP-P-FC200 airborne modules and confirm the specified load-bearing attachment points during integration. The cable working voltage is 1500 VDC and rated current is 50 A.

Confirm aircraft readiness, battery status, cable routing, ground-equipment settings and the mission area before flight. Use the verified commissioning and flight procedure for the installed configuration.

Follow the aircraft manufacturer instructions and the verified integration procedure for takeoff, high-voltage activation, landing and shutdown.

Keep personnel clear of the aircraft operating and landing area. Assign the aircraft and ground-equipment roles before operation.

Follow the verified shutdown and electrical isolation procedure before handling connectors. Electrical work must be performed by appropriately qualified personnel.

Manage the tether to avoid ground dragging, abrasion, sharp edges and snagging during deployment and recovery.

Use protective packaging for aircraft, power modules and ground equipment during transport and storage.

4 Firefighting configuration





TP-FlyCart 200 firefighting configuration

The TP-FlyCart 200 system can be integrated with a fire hose and the FC200-FN1 nozzle for water or firefighting foam delivery. The tether provides electrical power; water or foam is delivered separately through the hose. We confirm the aircraft, hydraulic supply, hose, nozzle and mission requirements with you.

	Parameter	Specification
	Dimensions	1810 × 132 × 80 mm
	Mass	1.45 kg
	Interface	Integrated aluminum alloy joint
	Extinguishing agents	Firefighting foam / firefighting water agent
FC200-FN1	Mounting	Insertable quick-release
	Aircraft compatibility	DJI FC200 / Customized third-party drones





TP-FlyCart 200 supplied firefighting photographs

5 Use and handling

TP-FlyCart 200 tethered equipment

1. Inspect the tether before each use. Check the outer sheath for damage or cracking and follow the equipment inspection procedure.
2. Protect the equipment with suitable transport cases and packaging.
3. Protect the equipment from dust and water according to the actual installation and equipment instructions. No complete-system ingress rating or water-ingress warranty is established by this manual.
4. Emergency actions depend on the aircraft, remaining batteries, power state and verified integration. Follow the applicable aircraft and integration emergency procedure.
5. Fully deploy the tether as required by the equipment operating procedure. Account for cable heating and the configured current during operation.
6. Only qualified personnel may handle the high-voltage equipment. Follow the verified electrical isolation procedure and required protective measures.
7. Avoid dragging the tether across stones or sharp objects during recovery. Check for cable damage before storage.

Site preparation

Plan site controls and protective equipment for the actual aircraft and firefighting operation, including warning tape, helmets, high-visibility vests and dry powder fire extinguishers as appropriate.

6 Maintenance storage and transport

Storage and transport

Follow the aircraft manufacturer instructions for battery removal, transport and storage. Keep batteries away from heat and incompatible materials.

Store the equipment in a dry environment protected from leaks and humidity.

Use the battery manufacturer instructions for storage charge, inspection, maintenance intervals and cold-weather preparation. Battery condition remains part of readiness for tethered operation.

Maintenance

The supplied equipment guidance calls for inspection after 20 takeoffs and landings or 20 hours of continuous tethered operation, including checking fasteners. Follow the applicable aircraft and equipment instructions if they require an earlier inspection.

Store equipment in a dry, ventilated environment when out of service.