

E5000 ADVANCED

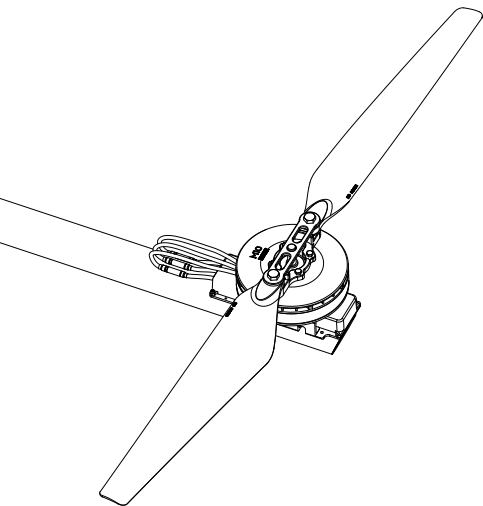
Tuned Propulsion System

多旋翼动力系统

User Manual

用户手册

V1.0 2018.03



Disclaimer

Thank you for purchasing the E5000 Advanced Tuned Propulsion System (hereinafter referred to as "product"). Read this disclaimer carefully before using this product. By using this product, you hereby agree to this disclaimer and signify that you have read it fully. Please install and use this product in strict accordance with the User Manual. SZ DJI TECHNOLOGY CO., LTD. and its affiliated companies assume no liability for damage(s) or injuries incurred directly or indirectly from using, installing or refitting this product improperly, including but not limited to using non-designated accessories.

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Legend



Important



Hints and Tips

Warning



When powered on, the motors and propellers will rotate very quickly and can cause serious damage or injuries if used improperly. Always maintain caution and make safety your top priority.



The E5000 Advanced generates powerful thrust. Be sure to operate it with caution to avoid potential safety risks. **DO NOT** use the E5000 Advanced if you are not an experienced user or you are under the age of 18.

1. The maximum allowable voltage of the E5000 Advanced is 52.2 V. Operate with care.
2. Always fly your aircraft in areas free of people, animals, power lines, and other obstacles.
3. DO NOT approach or touch the motors or propellers when the unit is powered on.
4. Before takeoff, ensure that the propellers and motors are installed correctly and the propellers are unfolded.
5. Ensure that all parts of the aircraft are in good condition. DO NOT fly with worn or damaged parts.
6. Check the connection of the 3-phase cable between the ESC and motor before each flight. Ensure that the insulating tape is firmly attached and replace whenever required.
7. Ensure that all parts are firmly in place and all screws are tight before each flight.
8. Only use compatible, authorized DJI parts.

Introduction

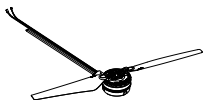
The E5000 Advanced Tuned Propulsion System is designed for multirotor aircraft with a payload of 4.5 to 7.0 kg/rotor. The system can be washed, making it ideal for industrial applications and aerial imaging in demanding environments, especially agriculture. The overall solution of a modular single rotor enhances convenience for assembly and configuration. A 40mm diameter carbon fiber tube is included in the package, while providing a wide range of tube length to choose from.

The brand new M10 motor features an integrated centrifugal cooling system and annular array of cooling fins to enhance heat dissipation. Reinforced blades and a perfected aerodynamic design minimize rotational inertia on the foldable 28-inch Z-Blade propellers to equip large platforms with sharp response.

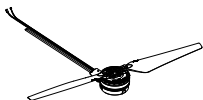
The 1280A ESC uses FOC (Field-Oriented Control) algorithms to allow for more motor responsiveness and precision control. Additional protection functions extend the life of the ESC. When used with the DJI N3, A3, N3-AG or A3-AG flight controllers, the ESC data cable handles communication with the flight controller and also acts as a backup throttle signal transmission cable for increased reliability and a safer flight.

1. Parts

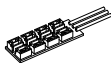
The Powertrain (CW × 4 or CCW × 4), Smart ESC Communication Cable and Updater can be purchased separately from DJI.



Powertrain (CW)



Powertrain (CCW)



Smart ESC
Communication Cable



Updater



E5000 Advanced provides versions including a tube of different length for users to choose from. Contact DJI for more details:

Email: info.industry@dji.com

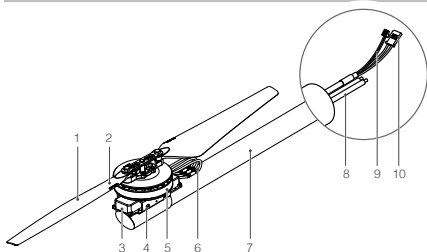
Telephone: +86 (0)755 2665 6677 ext. 383089

2. Flight Controller Settings

The E5000 ESC features a DJI optimized FOC algorithm to offer improved performance during rotor acceleration and deceleration. The gain values and power bandwidth must be adjusted according to your flight control system and airframe. The table below shows typical parameters when using the E5000 Advanced with a DJI A3 flight control system, a six-rotor frame with a diagonal distance of 1600 mm, and at a takeoff weight of 35 kg:

Basic Gain				Sensitivity Gain		Power Bandwidth
Pitch	Roll	Yaw	Throttle	Brake	Attitude	
110%	110%	100%	100%	50%	100%	100%

3. Overview



- | | |
|-------------------------|---|
| 1. Propeller | 8. Power Cables (red, VCC; black, GND) |
| 2. CW or CCW Mark | 9. Data Cable (for communication and firmware update) |
| 3. ESC Status Indicator | 10. Signal Cable (to the flight controller) |
| 4. ESC | |
| 5. Motor | |
| 6. 3-Phase Cable | |
| 7. Arm Tube (OD 40mm) | |

4. Installation and Connection



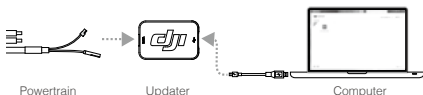
- Use a suitable airframe that can withstand the large thrust delivered by the E5000 Propulsion System.
- The powertrain includes a 40mm diameter carbon fiber tube. Mount the powertrain to an appropriate connector only.
- Identify the clockwise and counter-clockwise marks on the propellers and mount the powertrains onto the corresponding positions of the airframe.

- 1) Mount the powertrain onto the corresponding position of the airframe. Rotate to ensure that the propeller is oriented upright, then fix it firmly.
- 2) Solder the red VCC cable and black GND cable of each powertrain to the frame's power system. Make sure that the solder points are strong and that there is no chance for a short circuit.
- 3) Connect the signal cable to your flight controller. The signal cable's red wire transmits the control signal; the black wire is for ground.
- 4) When using the powertrain together with the DJI N3, A3, N3-AG or A3-AG flight controller, connect the data cable to the iESC port on the flight controller via the smart ESC communication cable for real-time communication with the flight controller and redundant

throttle signal transmission. Arrange the cable properly if not used, so that it will not interfere with other on-board devices.


5. Using DJI Assistant 2


The DJI ASSISTANT™ 2 is used to update the ESC firmware.*
Be sure to remove the propellers before using DJI Assistant 2.



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Before using the Updater, unplug any other serial devices that are connected to your computer, then follow the instructions below:

- 1) Download and install DJI Assistant 2 from the official DJI website. (<http://www.dji.com/e5000/info#downloads>)
- 2) Connect the Updater to the powertrain with the data cable and to your computer with a Micro USB cable.
- 3) Connect a 12S LiPo battery to the powertrain to supply power to the system. Do not disconnect the powertrain from the computer or power supply until the configuration is complete.
- 4) Launch DJI Assistant 2. When a connection is established, the software will display the connected devices.
- 5) Click  under "Connected Devices" to enter the firmware update page. Check the current firmware version and ensure the installed firmware is up to date. If not, login with your DJI account and click the Upgrade button.








 If your ESC is not recognized by DJI Assistant 2 (no connected devices):

- Check if there is more than one FTDI device connected such as another DJI Updater, an FTDI USB adapter or development board (e.g. a BeagleBone, Raspberry or Arduino board). Unplug the other FTDI devices, restart the ESC and DJI Assistant 2, and try again.
- Re-connect the ESC and the power supply in the following order: Connect the ESC to your computer, connect the power supply to the ESC, and then launch DJI Assistant 2.




※ When using the ESC together with the DJI N3 or A3 flight controller, connect the data cable to the iESC port on the flight controller via the smart ESC communication cable to update all the connected ESCs' firmware together in the flight controller page of DJI Assistant 2: Connect the flight controller to DJI Assistant 2 -> flight controller icon -> Firmware Update -> ESC Firmware List.

6. ESC Status Description

The 1280A smart ESC's protection and alarm functions prevent damage and extend its lifespan. ESCs status is displayed by the ESC Status Indicator and notification sounds.

Status	LED	Sound	ESC Output	Cause	Resolution
Normal Operation	 Slow Pulsing Green	♪1356	Normal	System Ready	/
	 Solid Green	/	Normal	Motor Started	/
	 Solid Yellow	/	Normal	Motors are rotating at full throttle.	/
Open-circuit Protection	 Blinking Red, Yellow and Green	/	Stop	Motor phase break or abnormal connection with the ESC when powered on.	Fix problem then restart ESC.
Short-circuit Protection				Motor cable short-circuiting, ESC output short-circuiting, or short-circuit inside the ESC.	
Stall Protection	 Blinking Red Rapidly	/	Stop	Motor Stalled	Fix problem then restart ESC.
Overheated Protection	 Blinks Red Twice	/	Normal	ESC internal temperature > 100°C.	ESC internal temperature < 80°C.
Throttle Backup*	 Blinking Yellow Slowly	/	Normal	Main throttle signal lost during flight, i.e. the ESC signal cable is disconnected. The system will switch to backup throttle automatically.	The aircraft can fly with the backup throttle. However, it is recommended to land the aircraft and re-connect the signal cable as soon as possible.

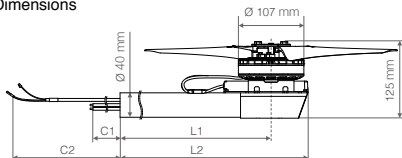
* DJI N3, A3, N3-AG or A3-AG flight controller required.

Abnormal Throttle Warning	 Blinking Yellow Slowly	Slow Beep	Stop	1. Both the main throttle and backup throttle signal were lost during flight, i.e. the ESC signal cable and data cable are disconnected. 2. Main throttle signal lost before the motor started.	1. Land the aircraft immediately and re-connect the cables. 2. The system will not switch to backup throttle. Re-connect the signal cable.
	 Blinking Yellow Rapidly	Single Beep	Stop	Starting input signal is not at the minimum.	Throttle input is smaller than 1120 μ s.
Abnormal Voltage Warning	 Blinking Red and Yellow Alternately	Double Beep	Stop	Starting input voltage is out of the range of the 12S LiPo battery, i.e. input voltage > 52.2 V or input voltage < 43.2 V.	Adjust input voltage.
Low Voltage Warning		/	Normal	Input voltage lower than 42 V when operating.	Voltage higher than 43.2 V.

7. Specifications

Max Thrust	14 kg/rotor (44.4 V, Sea Level)
Recommended Battery	12S LiPo
Recommended Takeoff Weight	4.5 to 7.0 kg/rotor (Sea Level)
Powertrain Arm Tube Outer Diameter	40 mm
Operating Temperature	14° to 122° F (-10° to 50° C)
ESC	
Max Allowable Voltage	52.2 V
Max Allowable Current (Continuous)	80 A
Max Peak Current (< 3 sec)	120 A
PWM Input Signal Level	3.3 V / 5 V Compatible
Operating Pulse Width	1120 to 1920 μ s
Signal Frequency	30 Hz to 500 Hz
Battery	12S LiPo
Motor	
Stator Size	100 x 10 mm
KV	120 rpm/V
Propeller	
Diameter x Thread Pitch	28 x 8 in (711 x 203 mm)
Weight (Single Propeller)	161 g

Dimensions



The corresponding powertrain dimensions and weight of each version are shown in the table below:

Tube Length (mm)	C1 (mm)	C2 (mm)	L1 (mm)	L2 (mm)	Single Powertrain Weight (g)
400	300	440	360	410	1140
450	250	390	410	460	1154
500	200	340	460	510	1168
550	150	290	510	560	1181
600	300	440	560	610	1230
650	250	390	610	660	1244
700	200	340	660	710	1258

8. Performance and Parameters

Use the data below to facilitate the proper use of the propulsion system.

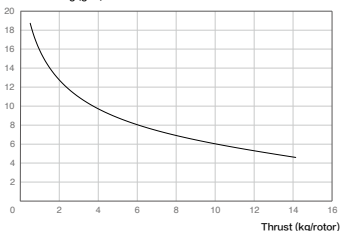


- Use the system at the recommended takeoff weight for optimal performance.
- DO NOT overload the system. A takeoff weight more than 1.2 times of the maximum recommended value will severely compromise safety and performance.

E5000 Propulsion System Performance

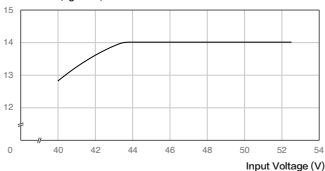
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Power Loading (g/W)

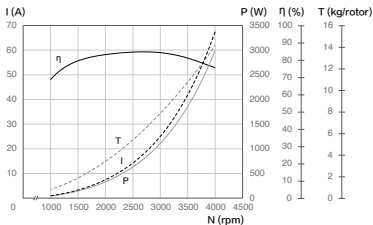


The data above was measured with an input voltage of 44.4 V, at a temperature of 25°C and sea level. The thrust was adjusted by the throttle.

Max Thrust (kg/rotor)



The data above was measured at full throttle, at a temperature of 25°C and sea level.

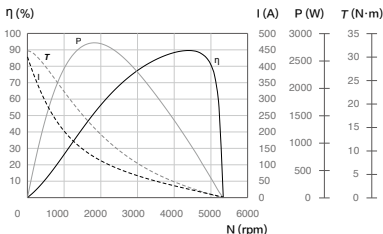


I – Current, P – Input Power, η – Electrical Efficiency, T – Thrust, N – Rotational Speed

The data above was measured with an input voltage of 44.4 V, at a temperature of 25°C and sea level. The rotational speed was adjusted by the throttle.

M10 Motor Performance

Performance Diagram



η – Efficiency, I – Current, P – Output Power, T – Torque, N – Rotational Speed

The data above contain theoretical values measured with an input voltage of 44.4 V, for reference only. When operating at a temperature of 25°C with no additional cooling devices, the motor cannot operate with a current more than 70 A. It can support short term operation (about 10 to 30 sec) with a current between 40 A and 70 A, and continuous operation with a current under 40 A. The motor run time should depend on the actual environmental temperature and cooling conditions.

Characteristic Parameters

Speed Constant	120 rpm/V
Back-Electromotive Force Constant*	0.0796 V·s/rad
Mechanical Time Constant	2.88 ms

Motor Rotor Inertia	302 kg·mm ²
Total Rotor Inertia (Propeller Included)	3408 kg·mm ²
Torque Constant*	0.0790 N·m/A
Line-to-Line Inductance**	41 to 50 μ H
Line-to-Line Resistance	60 m Ω
Thermal Time Constant	600 s

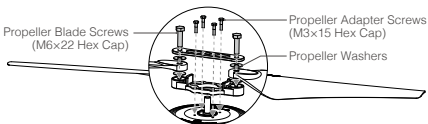
* The Back-EMF Constant and Torque Constant may vary when the motor current is strong. The values provided mainly apply to when the motor current is under 20 A.

** The Line-to-Line Inductance was measured with a current frequency of 1 kHz in an RLC circuit. It varies periodically as a function of the rotor position.

9. FAQ

How do I replace the propeller blades or propeller adapters if they are damaged?

- 1) Prepare two propeller blade screws (M6×22 hex cap), four propeller adapter screws (M3×15 hex cap), and four propeller washers.
- 2) Apply threadlocker to the screw holes on the motor and the propeller adapter.
- 3) Assemble the propeller and tighten with two propeller blade screws (M6×22 hex cap) so that the blades can fold smoothly. Mount the propeller onto the motor and use four propeller adapter screws (M3×15 hex cap) to secure the propeller.



- Ensure the screw is secured tightly for the threadlocker to be effective.
- Ensure the threadlocker is completely dry and solid before flight to prevent the propeller from flying off the motor.

This content is subject to change.

Download the latest version from
<http://www.dji.com/e5000>



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符号说明



重要注意事项



操作、使用提示

产品使用注意事项



若使用不当，高速旋转的螺旋桨可能会对人身财产造成严重伤害和破坏。因此在使用时，请务必注意安全。



E5000 进阶版拉力较大，为避免潜在的安全风险，务必谨慎操作。非专业用户及未满 18 岁的人士请勿使用。

1. E5000 进阶版最大允许电压高达 52.2 V，务必遵守相关安全规范进行操作。
2. 使用时请远离不安全因素，如障碍物、人群、高压线等。
3. 切勿贴近或接触旋转中的电机或螺旋桨，避免被旋转中的螺旋桨割伤。
4. 使用前请检查螺旋桨和电机是否安装正确，折叠桨是否已展开。
5. 使用前请检查各零部件是否完好。如有部件老化或损坏，请更换新部件。
6. 每次飞行前，检查电调和电机三相线的连接和固定情况，确保绝缘胶布粘贴牢靠，必要时请更换绝缘胶布重新固定。
7. 每次飞行前，检查飞行器各部分结构及螺丝是否松动。
8. 请使用 DJI 提供的零配件。

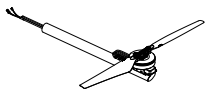
简介

E5000 进阶版是一款单轴负载 4.5 - 7.0 kg 的多旋翼动力系统，全系统可进行冲洗维护，适合行业应用及专业航拍，尤其适合农业应用。模块化的单轴整体解决方案，安装调试简单快捷。包含 40mm 直径碳管，提供多种臂长可以选择。

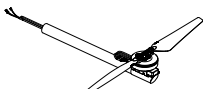
M10 电机配备上升式离心风冷系统，配合中心环形散热阵列，全面提升冷却效率。Z-Blade 28 寸折叠桨采用新一代翼型和优秀的气动设计，低惯量特性有效帮助大型机架保持灵敏控制。1280A 智能电调采用磁场定向控制（FOC，Field-Oriented Control）算法，实现精准敏捷的电机驱动控制；主动保护功能可延长使用寿命；适配 DJI N3、A3、N3-AG 及 A3-AG 飞控系统，特有的数据线可实现与飞控的实时通信及备份油门信号的传输。

1. 相关物品

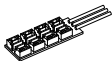
E5000 进阶版的动力总成（CW×4 或 CCW×4）、智能电调通信转接线、升级器均为单个独立包装，用户可分别购买。



动力总成（CW）



动力总成（CCW）



智能电调通信转接线



升级器



E5000 进阶版有多个版本可供选择，不同版本所包含的碳管长度不同，详情咨询 DJI 直营：

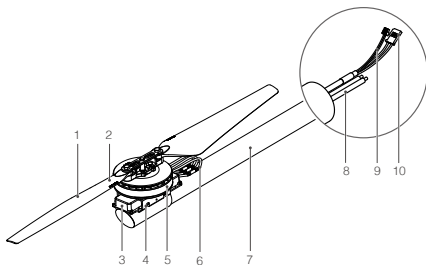
邮箱：info.industry@dji.com 电话：0755-26656677 转 383089

2. 飞控参数调节

E5000 动力系统电调采用 DJI 优化的 FOC 算法，提升了加减速性能。使用前，用户需要根据所使用的机架及飞控系统适当调节感度参数及动力带宽。下表是配合 A3 飞控系统和轴距为 1600 mm 的六轴机架使用，起飞重量为 35 kg 时的一组典型参数：

基础感度				灵敏感度		动力带宽
俯仰	横滚	航向	油门	刹车	姿态	
110%	110%	100%	100%	50%	100%	100%

3. 部件名称



- | | |
|-----------------|------------------|
| 1. 螺旋桨 | 8. 电源线 |
| 2. CW 或 CCW 标记 | 红色, VCC; 黑色, GND |
| 3. 电调状态指示灯 | 9. 电调数据线 |
| 4. 电调 | 用于通信及固件升级 |
| 5. 电机 | 10. 电调 PWM 信号线 |
| 6. 三相线 | 连接至飞控 |
| 7. 碳管 (外径 40mm) | |

4. 安装与连线



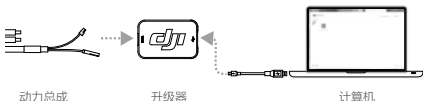
- E5000 动力系统的拉力较大, 务必确保您所选用机架的结构强度与动力系统提供的拉力匹配。
- 动力总成包含外径 40 mm 的碳管, 请安装至合适的连接件上。
- 安装时, 请注意区分螺旋桨上的 CW 或 CCW 标记, 将其安装至机架的对应位置。

- 1) 将动力总成安装至机架对应位置, 保证安装完成后螺旋桨朝向正上方, 然后将其固定。
- 2) 将电源线焊到您机架的电源系统上, 注意焊点牢固并且不会出现短路。电源线红色为电源 VCC, 黑色为地 GND。

- 3) 将电调 PWM（脉宽调制）信号线连接至飞控。其中红色线为控制信号线，黑色线为地线。
- 4) 若使用 DJI N3 / A3 / N3-AG / A3-AG 飞控系统，将电调数据线通过智能电调通信转接线连接至主控器的 iESC 接口，可实现与飞控的实时通信及油门信号冗余传输。不使用时请注意将线材收好，避免影响飞行。

5. 使用 DJI Assistant 2

用户可通过 DJI ASSISTANT™ 2 调参软件进行电调固件升级^{*}等。连接至 DJI Assistant 2 前，务必确保螺旋桨已拆下。



使用升级器前，请移除计算机上的其他串口设备，然后按以下步骤操作：

- 1) 从 DJI 官方网站下载并运行 DJI Assistant 2 安装程序，按照提示完成软件安装。（<http://www.dji.com/e5000/info#downloads>）
- 2) 将电调数据线接入升级器一端的接口，使用 Micro USB 线连接升级器与计算机。
- 3) 连接 12S LiPo 电池为内置电调供电，设置完成前请勿切断电源或断开连接。
- 4) 运行 DJI Assistant 2。软件界面显示已连接设备，表示电调与软件连接上并能正常通信。
- 5) 点击已连接设备中的 ESC 进入固件升级界面，查看固件版本。如果服务器上的固件较新于您的当前版本，注册 DJI 帐号或使用已有帐号登录，点击相应的链接按照提示进行升级。



若 DJI Assistant 2 无法识别电调（未显示已连接设备）：

- 请检查计算机是否接有多个升级器、FTDI USB 适配器或其他可能使用到 FTDI 芯片组的开发工具（包括但不限于：BeagleBone、Raspberry、Arduino 等）。如果是，请断开其他 FTDI 设备，仅保留一个升级器，然后重新为电调供电，再重启软件，即可恢复正常。
- 请注意是否按照以下顺序进行连接和供电：首先将电调连接至计算机，然后为电调供电，最后运行 DJI Assistant 2。




※ 若使用 DJI N3 / A3 / N3-AG / A3-AG 飞控系统，将电调数据线通过智能电调通信转接线连接至主控器的 iESC 接口，可在飞控调参界面同时升级所有已连接电调的固件：将飞控连接至 DJI Assistant 2 -> 飞控产品图标 -> 固件升级 -> ESC 固件列表。

6. 电调工作状态描述

1280A 智能电调具备主动保护及报警功能，可减少电调损坏，延长使用寿命。用户可通过电调状态指示灯或提示音了解电调工作状态。

工作状态	指示灯	提示音	电调输出	触发的条件	解除的条件
正常工作	 绿灯呼吸点亮	♪ 1356	正常	系统就绪	/
	 绿灯常亮	/	正常	电机已启动	/
	 黄灯常亮	/	正常	满油门旋转	/
断路保护	 红黄绿灯交替闪烁	/	关闭	上电时电机相线断路、与电调连线异常	修复后重启电调
短路保护				上电时电机相线短路、电调输出短路、电调内部短路	
堵转保护	 红灯快闪	/	关闭	电机堵转	修复后重启电调
过温报警	 红灯双闪	/	正常	电调内部温度超过 100℃	电调内部温度低于 80℃
油门备份 *	 黄灯慢闪	/	正常	飞行过程中主油门丢失，即电调 PWM 信号线连接断开，自动切换至备份油门	使用备份油门可以正常飞行至降落，但仍建议用户尽快降落并重新连接 PWM 信号线

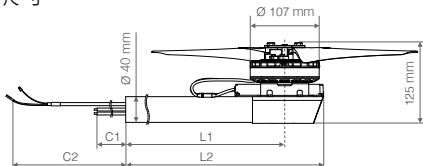
* 需配合 DJI N3 / A3 / N3-AG / A3-AG 飞控

油门异常报警	 黄灯慢闪	B---B...	关闭	1. 飞行过程中主油门及备份油门均丢失，即电调 PWM 信号线和数据线均断开 2. 电机未启动时主油门丢失	1. 立即降落并重新连线 2. 此时不可切换至备份油门，请重新连线
	 黄灯快闪	BBB...	关闭	上电时油门不在最小值	油门恢复到 1120 μ s 以下
电压异常保护	 红黄灯交替闪烁	BB---BB...	关闭	上电时输入电压不在 12S 锂电池正常工作范围内，即大于 52.2 V 或小于 43.2 V	调整输入电压
低电压报警		/	正常	运行过程中输入电压低于 42 V	电压恢复至 43.2 V 以上

7. 规格参数

最大拉力	14 千克 / 轴 (44.4 V, 海平面)
推荐电池	12S LiPo
推荐起飞重量	4.5 - 7.0 千克 / 轴 (海平面)
动力总成碳管外径	40 mm
使用环境温度	-10 至 50℃
电 调	
最大允许电压	52.2 V
最大允许电流 (持续)	80 A
最大允许峰值电流 (3 秒)	120 A
PWM 输入信号电平	3.3 V / 5 V 兼容
工作脉宽	1120 - 1920 μ s
兼容信号频率	30 - 500 Hz
电 池	12S LiPo
电 机	
定子尺寸	100 \times 10 mm
KV 值	120 rpm/V
螺旋桨	
直径 \times 螺距	711 \times 203 mm (28 \times 8 inch)
重量 (单个螺旋桨)	161 g

尺 寸



各版本动力总成的尺寸及重量如下表：

碳管长度 (mm)	C1 (mm)	C2 (mm)	L1 (mm)	L2 (mm)	单个动力总成重量 (g)
400	300	440	360	410	1140
450	250	390	410	460	1154
500	200	340	460	510	1168
550	150	290	510	560	1181
600	300	440	560	610	1230
650	250	390	610	660	1244
700	200	340	660	710	1258

8. 性能参数

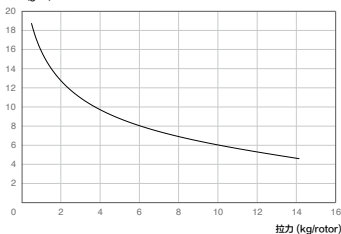
请根据以下性能参数合理使用动力系统。



- 建议在推荐起飞重量下飞行，以获得最佳性能。
- 请勿超重飞行，起飞重量超过最大推荐值的 1.2 倍会严重影响性能以及安全性。

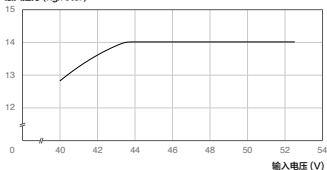
E5000 动力系统性能

力效 (g/W)

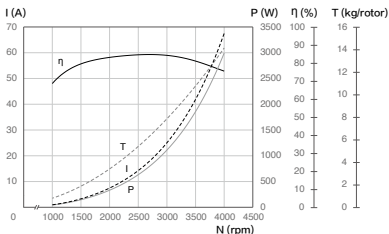


以上数据为输入电压 44.4 V、室温 25℃、海平面高度的环境下，变化油门输入调节拉力测得。

最大拉力 (kg/rotor)



以上数据为室温 25℃、海平面高度的环境下，满油门，调节输入电压测得。

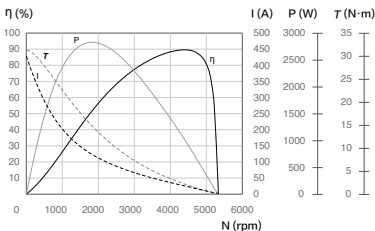


I- 电流, P- 输出功率, η - 电效率, T- 拉力, N- 转速

以上数据均为输入电压 44.4 V、室温 25℃、海平面高度的环境下, 变化油门输入调节转速测得。

M10 电机性能

性能曲线



η - 效率, I- 电流, P- 输出功率, T- 扭矩, N- 转速

以上数据均为输入电压 44.4 V 时的理论值, 仅供参考。在室温 25℃、无额外冷却装置的情况下, 电流超过 70 A 为不可工作区域, 40 - 70 A 为短时 (约 10 - 30 s) 工作区域, 40 A 以下为可持续工作区域。实际使用时, 请根据工作环境温度和散热条件控制电机运行时间。

特征参数

速度常数	120 rpm/V
反电动势常数 *	0.0796 V·s/rad
机械时间常数	2.88 ms

电机转子惯量	302 kg·mm ²
转子总惯量（含桨）	3408 kg·mm ²
扭矩常数 *	0.0790 N·m/A
线电感 **	41 - 50 μH
线电阻	60 mΩ
热时间常数	600 s

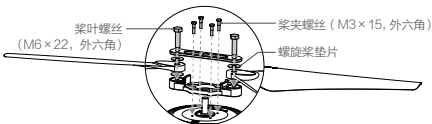
* 反电动势常数和扭矩常数在电机电流较大时会有所变化，以上数据主要适用于 20 A 以下工况。

** 线电感是在电流频率 1 kHz 的 RLC 电路中测得，其值随转子位置周期性变化。

9. 常见问题

如何更换桨叶或桨夹？

- 1) 使用 2 颗桨叶螺丝（M6×22，外六角）、4 颗桨夹螺丝（M3×15，外六角）和 4 个螺旋桨垫片重新安装螺旋桨。
- 2) 在桨夹和电机上方的安装孔螺纹内使用螺丝胶。
- 3) 安装桨叶螺丝（M6×22，外六角）至桨叶被夹紧且可自由旋转，然后安装 4 颗桨夹螺丝（M3×15，外六角）并拧紧。



- 确保拧紧螺丝。螺丝过松可能会导致螺丝胶无法完全干燥固化。
- 务必在螺丝胶完全干燥固化后再进行飞行，否则可能导致射桨。

内容如有更新，恕不另行通知。

您可以在 DJI 官方网站查询最新版本《用户手册》
<http://www.dji.com/e5000>



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Compliance Information

FCC Compliance

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) This device must accept any interference received, including interference that may cause undesired operation.

Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

EU Compliance Statement

SZ DJI TECHNOLOGY CO., LTD. hereby declares that this device is in compliance with the essential requirements and other relevant provisions of the EMC Directive.

A copy of the EU Declaration of Conformity is available online at www.dji.com/euro-compliance



EU contact address: DJI GmbH, Industrie Strasse 12, 97618, Niederlauer, Germany

部件名称	有害物质					
	铅 (Pb)	汞 (Hg)	镉 (Cd)	六价铬 (Cr ⁺⁶)	多溴联苯 (PBB)	多溴二苯醚 (PBDE)
线路板	×	○	○	○	○	○
外壳	×	○	○	○	○	○
金属部件 (铜合金)	×	○	○	○	○	○
内部线材	×	○	○	○	○	○
其他配件	×	○	○	○	○	○

本表格依据 SJ/T 11364 的规定编制。

○：表示该有害物质在该部件所有均质材料中的含量均在 GB/T 26572 规定的限量要求以下。

×：表示该有害物质至少在该部件的某一均质材料中的含量超出 GB/T 26572 规定的限量要求。（产品符合欧盟 ROHS 指令环保要求）

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