5020 IPE V3 Brushless DC Motor MAD

Our Product Introduction

Basic Information

- Place of Origin: Guangdong, China
- Brand Name: GS
- Model Number: 5020 IPE V3 205KV
- Price: Negotiable

Product Specification

- RPMNV: 205 KV
- No Load Current: 1.2A/20V
- Motor Weight: 290 G
- Maximum Current: 40.7 A
- Maximum Thrust: 8 Kg
- Recommended EsC: MAD AMPX 60A (5-14S)
- Nominal Voltage: 12S Lipo Battery
- Product Boxed Weight: 466g(110 X 110 X50 Mm)
- Maximum Power: 1905W
- Recommended Propellers: 16x8.0 17x10.0 18x8.0
- Single Rotor Take-off Weight: 2kg ~ 3kg
- Highlight: **Long Tethered UAV Power Supply**, **Aluminum Alloy UAV Power Supply**, **Aluminum Alloy Drone Power Supply**

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Our Produc

Product Description

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5020 205KV As the hot motors in the field, because it is the darling of 2.5-3.5kg VTOL aircraft, at the same time 5020 KV205 is also the best power solution for the quadcopter with take-off weight of 2.5-3.5kg.It is widely used for the long-range inspection drone mapping drone surveying drone quadcopter hexcopter mulitirotor.

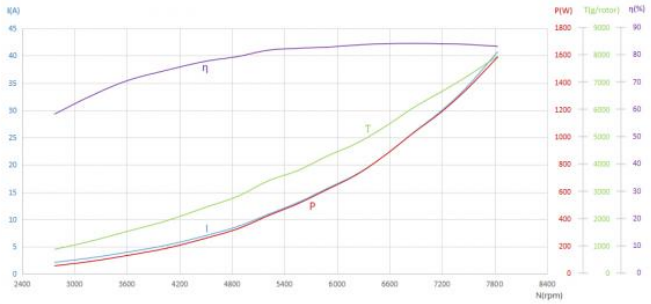
High Efficiency: Brushless DC motors are known for their high efficiency compared to brushed motors, which translates to longer battery life and lower energy consumption.

High Torque: Capable of providing high torque, making them suitable for demanding applications.
Durability: With fewer moving parts and no brushes, these motors have a longer lifespan and require less maintenance.
Precision Control: Ideal for applications requiring precise speed and position control.
Cooling System: Advanced cooling mechanisms to handle high power outputs without overheating.

MAD 5020 IPE 205KV **APC** 18x8.0 **AMPX** 60A (5-14S) **12S** MAX 89℃

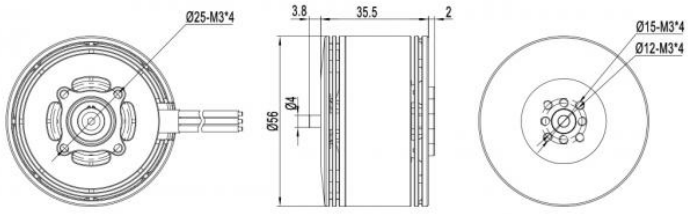
Analytical Graph of Motor Operation

I – Current, P – Input Power, η – Electrical Efficiency, T – Thrust, N – Rotational Speed
The data above was measured with an input voltage of 48 V, at a temperature of 25°C and sea level. The rotational speed was adjusted by the throttle.



Motor Data			
Motor Model	MAD 5020 IPE V3.0	Number of pole pairs	14
Stator	TAIWAN / Anticorrosive	Varnished wire Degree	180°C
Motor Size	D:56 × 41.3 mm	Magnet Degree	150°C
Degree of Protection	IP45	Cable Length	150 mm 16# Awg(Black) silicone
Centrifugal Heat Dissipation	YES	Rotor Balance	≤5 mg
Propeller Mounting Holes	D:12 M3×4, D:15 M3×4	Motor Balance	≤10 mg
Shaft Diameter	IN: 6 mm	Motor Mounting Holes	D:25 M3×4
Bearing	EZO 696ZZ*2	Disruptive test	500 V
Additional Accessories	Propeller Plate *1, Ø4-6 Adapter Ring *1, 3.5mm Bullet Connector*3, Heat Shrinkable Tube*3, M3*6mm *4 propeller seat Screws, M3*10mm *4 Motor Screws, Sticker*2		

Specifications			
RPM/V	205 KV	Nominal Voltage	12S lipo battery
No Load Current	1.2A/20V	Internal resistance	43mΩ
Motor Weight	290 g	Product Boxed Weight	466g (110 x 110 x 50 mm)
Maximum Current	40.7 A	Maximum Power	1905W
Maximum thrust	8 kg	Maximum Torque	1.94 Nm
Recommended ESC	MAD AMPX 60A (5-14S)	Recommended Propellers	16x8.0, 17x10.0, 18x8.0
UAV take-off weight	12S-18"/ 11kg--Quadcopter 16.5kg--Hexacopter 22kg--Octocopter	Single rotor take-off weight	2kg ~ 3kg



MAD 5020 IPE 205KV **APC** 16x8.0 **AMPX** 60A (5-14S) **12S** MAX 60℃

Throttle [%]	Voltage [V]	Current [A]	Input Power [W]	Output Power [W]	Torque [N×m]	RPM	Thrust [gf]	Efficiency [%]	Efficiency [gf/W]
30	47.97	1.85	88.7	41.1	0.139	2823	637	46.3	7.2
35	47.96	2.43	116.5	62.6	0.184	3249	850	53.7	7.3
40	47.94	3.14	150.5	91.8	0.235	3731	1095	61	7.3
45	47.9	4.33	207.4	140.6	0.318	4223	1483	67.8	7.1
50	47.87	5.45	260.9	189.2	0.388	4656	1766	72.5	6.8
55	47.84	6.76	323.4	243.1	0.460	5046	2110	75.2	6.5
60	47.79	8.24	393.8	304.7	0.538	5408	2473	77.4	6.3
65	47.75	9.6	458.4	360.4	0.599	5745	2769	78.6	6.0
70	47.68	11.84	564.5	457.2	0.715	6106	3236	81	5.7

80	47.54	16.8	798.7	667.4	0.935	6816	4131	83.6	5.2
85	47.45	19.76	937.6	791.6	1.051	7192	4623	84.4	4.9
90	47.36	22.89	1084.1	922.2	1.169	7533	5043	85.1	4.7
95	47.23	26.85	1268.1	1085.7	1.321	7848	5583	85.6	4.4
100	47.08	31.82	1498.1	1280.9	1.481	8259	6083	85.5	4.1

MAD 5020 IPE 205KV **APC** 17x10.0 **AMPX** 60A (5-14S) **12S** MAX 77℃

Throttle [%]	Voltage [V]	Current [A]	Input Power [W]	Output Power [W]	Torque [N×m]	RPM	Thrust [gf]	Efficiency [%]	Efficiency [gf/W]
30	47.96	2.02	96.9	60.7	0.210	2762	868	62.6	9.0
35	47.95	2.78	133.3	89.4	0.270	3163	1114	67.1	8.4
40	47.92	3.78	181.1	130.7	0.347	3598	1451	72.2	8.0
45	47.87	5.16	247.0	187.9	0.444	4042	1864	76.1	7.5
50	47.82	6.98	333.8	262.9	0.562	4467	2316	78.8	6.9
55	47.77	8.81	420.9	340.7	0.672	4841	2715	80.9	6.5
60	47.71	10.8	515.3	421.3	0.773	5205	3101	81.8	6.0
65	47.64	13.02	620.3	513.2	0.885	5538	3543	82.7	5.7
70	47.57	15.38	731.6	607.3	0.989	5864	3925	83	5.4
75	47.49	18.6	883.3	742.4	1.144	6197	4514	84	5.1
80	47.38	21.86	1035.7	876.7	1.279	6546	4971	84.6	4.8
85	47.25	26.3	1242.7	1053.9	1.478	6809	5428	84.8	4.4
90	47.1	30.98	1459.2	1232.5	1.653	7120	5848	84.5	4.0
95	46.94	36.1	1694.5	1423.9	1.838	7398	6281	84	3.7
100	46.72	43.5	2032.3	1688.9	2.094	7702	6690	83.1	3.3

MAD 5020 IPE 205KV **APC** 18x8.0 **AMPX** 60A (5-14S) **12S** MAX 89℃

Throttle [%]	Voltage [V]	Current [A]	Input Power [W]	Output Power [W]	Torque [N×m]	RPM	Thrust [gf]	Efficiency [%]	Efficiency [gf/W]
30	47.95	2.11	101.2	59.3	0.204	2774	900	58.6	8.9
35	47.93	2.9	139.0	90.4	0.272	3172	1189	65	8.6
40	47.91	3.97	190.2	134.6	0.357	3600	1554	70.8	8.2
45	47.87	5.29	253.2	189.2	0.445	4060	1955	74.7	7.7
50	47.82	6.98	333.8	260.1	0.553	4492	2433	77.9	7.3
55	47.77	8.7	415.6	331.4	0.650	4868	2849	79.7	6.9
60	47.7	10.93	521.4	427.8	0.783	5217	3415	82	6.6
65	47.64	13.08	623.1	515.3	0.886	5554	3791	82.7	6.1
70	47.57	15.54	739.2	614.4	0.999	5873	4298	83.1	5.8
75	47.48	18.33	870.3	730.0	1.119	6230	4797	83.9	5.5
80	47.38	21.87	1036.2	874.1	1.273	6557	5415	84.4	5.2
85	47.25	26	1228.5	1037.5	1.440	6880	6107	84.5	5.0
90	47.13	29.82	1405.4	1185.5	1.575	7188	6671	84.4	4.7
95	47	34.3	1612.1	1356.2	1.730	7486	7241	84.1	4.5
100	46.81	40.7	1905.2	1589.1	1.937	7834	7981	83.4	4.2

The above data are the theoretical values when the input voltage is 48 V, for reference only. In the case of room temperature of 25°C and no additional cooling device, the current over 41A is non-working zone,13-41A is short-term (about 10-30s), working zone, and below 13A is sustainable working zone. In actual use, please control the motor running time according to the working environment temperature and heat dissipation conditions.

Our Services

1. We provide 1 Year Warranty. Buy with confidence.
2. If you are not satisfied when you receive your item, please return it within 14 days for a replacement or money back. Please contact me before you return it.
3. If item is defective in 3 months, We will send you a replacement without extra charger, or offer refund after we receive the defective item.
4. If item is defective after 3 months, you can still send it back to us. We will send you a new one after receiving the defective item. But you have to pay the extra shipping fee.

FAQ

Q1: Do you support OEM/ODM?
A1: Yes. We can print your logo on the product.
Q2: About samples.
A2: Under normal circumstances, samples will be ready within 7 days, and 10-20 days for OEM/ODM orders. Sample fee and shipping will be charged.
Q3: What is the delivery time?
A3: For regular orders, we can ship within 15 days, for OEM/ODM, we can ship within 25-45 days (depending on the quantity). In the event of delays, we will notify you in advance of the status and resolution.
Q4: What is the minimum order quantity?
A4: There is no MOQ for wholesale (1 piece accepted), including OEM/ODM.
Q5: What are your payment terms?
A5: L/C.TT100%.
Q6: Can you reduce the shipping cost?
A6: When calculating the shipping cost for you, we always choose the cheapest and safest express. Although we have partnerships with shipping companies, we can't keep costs down because it's not us who get paid. If you think it's expensive for you. You can always make your own choice.
Q7: Return policy.
A7: If you want to replace the received item, you must contact us within 7 days after receiving the item. Returned items should be in their original condition and you should pay for additional shipping.

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