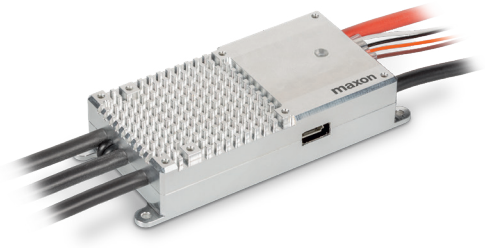
UAV ESC 52/30 Digital I/O Data

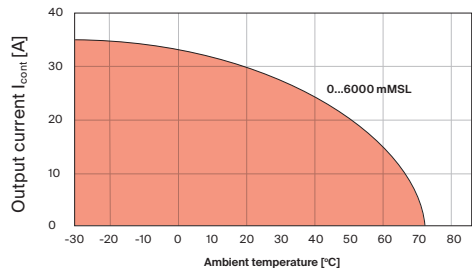
Electronic speed controller designed for professional UAV applications



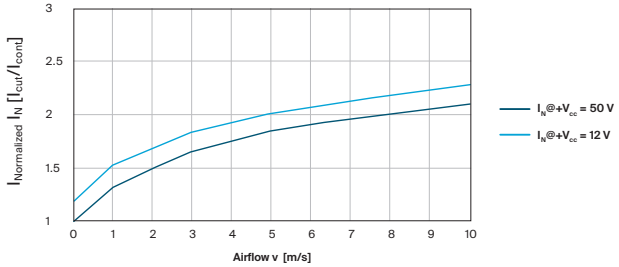
			Part number	
			654541	
Electrical data				
1	Nominal power supply voltage +V_{cc}	VDC	9...52.2	(3S...12S LiPo Battery)
2	Absolute supply voltage +V_{min} / +V_{max}	VDC	8 / 56	
3	Output voltage (max.)	VDC	0.95 x V_{CC}	
4	Output current I_{cont}	A	30	Airflow 0 m/s; no additional heat sink; T_A=20°C;+V_{cc}=52.2V
5	Output current I_{max}	A	90	Airflow 0 m/s; no additional heat sink; T_A=20°C;+V_{cc}=52.2V; t<25 s
6	Pulse width modulation frequency	kHz	25	
7	Commutation			Sensorless, FOC
8	Sampling rate PI current controller	kHz	25	(40µs)
9	Sampling rate PI speed controller (closed loop)	kHz	2.5	(400µs)
10	Max. efficiency	%	>99	
11	Max. speed BLDC motor (sinusoidal)	rpm	150000	(1 pole pair)
12	Built-in motor choke		none	
Inputs & Outputs				
13	Digital input «Set Value»	VDC	+2.50...+5.25	(optically isolated), pulse width distortion max. 50 ns
14	Digital output «Speed Monitor e-rpm»	VDC	max. 12	I_L≤15mA; (optically isolated), max. 2.5kHz
15	Analog input «Motor winding temperature»			For use with NTC resistor 10kΩ; B25/85 = 3435 K / 3490K / 3610 K / 4000 K or 4480 K
Connections & Interfaces				
16	BLDC motor			Motor winding 1, 2, 3
17	USB			USB 2.0, full speed
Physical				
18	Dimensions (L x W x H)	mm	86 x 38 x 17	
19	Weight (incl. cable, incl. housing)	g	102	Cable lengths as specified in technical drawing
20	Weight (incl. cable, excl. housing)	g	66	Cable lengths as specified in technical drawing
21	Weight (excl. cable, excl. housing)	g	18	
22	Mounting			4 mounting holes for M2 screws
Environmental conditions				
24	Standard operating temperature	°C	-30...+20	Temperature range to meet the stated performance data without additional heat sink or airflow
25	Extended temperature range	°C	+20...+72	Consider derating
26	Storage temperature	°C	-40...+85	
27	Operating altitude	m MSL	0...6000	Altitude in meters above Mean Sea Level
28	Humidity	%	5...90	Condensation over extended periods or water immersion are not permitted

Derating and increase of output current

Operation within extended temperature range leads to derating of output current I_{cont} according to the following graphic:



With additional airflow, the output current I_{cont} determined from the graphic above is increased by a factor defined in the following graphic.



Notes

UAV-ESC Software/Firmware Bundle Download : uav.maxongroup.com