

UAV-ESC 52/30 Digital-I/O Data

Electronic speed controller designed for professional UAV applications



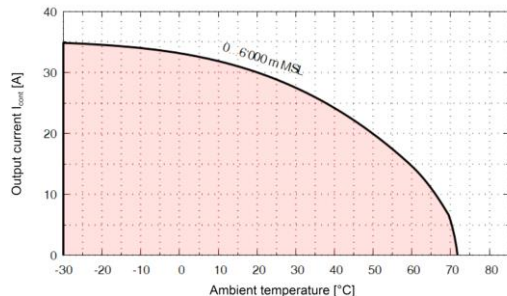
Part Number

654541

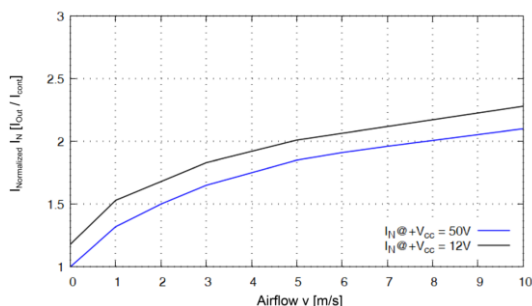
Electrical Data			
1 Nominal power supply voltage $+V_{cc}$	VDC	9...52.2	(3S...12S LiPo Battery)
2 Absolute supply voltage $+V_{min} / +V_{max}$	VDC	8 / 56	
3 Output voltage (max.)	VDC	$0.95 \times V_{cc}$	
4 Output current I_{cont}	A	30	Airflow 0 m/s; no additional heat sink; $T_A=20^\circ\text{C}; +V_{cc}=52.2\text{V}$
5 Output current I_{max}	A	90	Airflow 0 m/s; no additional heat sink; $T_A=20^\circ\text{C}; +V_{cc}=52.2\text{V}; t < 25\text{ s}$
6 Pulse width modulation frequency	kHz	25	
7 Commutation			Sensorless, FOC
8 Sampling rate PI current controller	kHz	25	(40 μs)
9 Sampling rate PI speed controller (closed loop)	kHz	2.5	(400 μs)
10 Max. efficiency	%	>99	
11 Max. speed BLDC motor (sinusoidal)	rpm	150'000	(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	$I_L \leq 15\text{mA}$; (optically isolated), max. 2.5kHz
15 Analog input «Motor winding temperature»			For use with NTC resistor 10k Ω ; B25/85 = 3435 K / 3490K / 3610 K / 4000 K or 4480 K
Connections & Interfaces			
16 BLCD 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	$^\circ\text{C}$	-30...+20	Temperature range to meet the stated performance data without additional heat sink or airflow.
25 Extended temperature range	$^\circ\text{C}$	+20...+72	Consider derating
26 Storage temperature	$^\circ\text{C}$	-40...+85	
27 Operating altitude	m MSL	0...6'000	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

Please contact aerospace@maxongroup.com

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