

Product Specification

Product Name : ESC

Product Model: STONE 80A-L

Version : V2.0

Date : 2024-12-13

NanChang ChangKong Technology Co., Ltd

I. PURPOSE

This product specification for the product in the production, testing and sales of the chain of norms to follow.

II. Scope of application

ESC, Used for input voltage: 15-25V DC.

III. Technical parameters

Item	Requirements	Remarks
Support lithium battery	4-6S(Above 30V prohibits startup)	Factory Inspection Items
Continuous operating current	80A	Specific thermal conditions
Instantaneous operating current (less than 3 seconds)	150A	
BEC Output Voltage	none	
Operating temperature	-20~+65°C	
Operating humidity	15%~85%RH	
preservation temperature	-10~+40°C	
Preservation of humidity	15%~65%RH	
waterproof rating	IP55	
Standby power consumption	≤14mA@25V	Factory Inspection Items
Throttle travel range	1000-2000us(default value)	calibratable
Throttle calibration range	maximum throttle(1.6-2.4ms), minimum throttle(0.6-1.4ms)	
Maximum supported speed	125,000 turn(Electrical RPM)	Mechanical RPM=Electrical RPM/polar logarithm
Throttle Refresh Frequency	50-500Hz(suggestion100-400Hz)	PWM low level>0.2ms
Starting Throttle Point	6.7%	
*Throttle Response Time	200ms(Default, customizable)	Throttle from idle to max
temperature protection point	125°C	
Input Signal Level	3.3-5V	
ESC weights	112g	±2g
Product Size	90.4*36*18.5mm	±0.1mm

* Throttle Response Time: ESC When 10% to 100% step throttle is received, the throttle reaches its maximum value within the specified time, but usually the motor speed lags the throttle 100~150ms。

* Performance parameters can be customized according to customer needs, Including but not limited to protection temperature, response time, etc.

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IV. Main material/part specifications

Item	Requirements	Remarks
Power cord specifications	12AWG	Factory Inspection Items
Power cord length	150±5mm	
Power cord color	Red (Positive) Black (Negative)	
Output phase line specifications	14AWG	
Output phase line length	100±5mm	
Signal Cable Specifications	UL1533-24AWG-gray	
Signal line length	540±5mm	
Data Feedback Cable Specifications	PVC cable-30 芯-black, red and white	
Data Feedback Line Length	80±5mm	
Shell material	Aviation aluminum alloy Surface anodized	

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V. Load test data

1.(test condition: environmental temperature30℃ , Supply Voltage20V, Data for reference only)

Load current	thermal condition	beta Time	starting temperature	Test results
40A	Shell uncovered, frontal wind speed 10.3m/s	7min	33℃	Normal operation, MOS temperature 48℃, no further temperature rise in 5 minutes and 45 seconds
40A	In a carton box (15*15*5cm), no wind	7min	32℃	Working normally, MOS temperature 72℃, still slowly warming up

2.(test condition: environmental temperature30℃ , Supply Voltage25V, Data for reference only)

Load current	thermal condition	beta Time	starting temperature	Test results
50A	Shell uncovered, frontal wind speed 13.2m/s	10min	33℃	Normal operation, MOS temperature 57℃, no more temperature rise in 8 minutes 02 seconds
60A	Shell uncovered, frontal wind speed 14.0m/s	10min	35℃	Normal operation, MOS temperature 61℃, no more temperature rise in 5 minutes 41 seconds
50A	In a carton box (15*15*5cm), no wind	7min	37℃	Working normally, MOS temperature 93℃, still warming up slowly
60A	In a carton box (15*15*5cm), no wind	7min	38℃	Working normally, MOS temperature 97℃, still warming up slowly

*Specific heat dissipation conditions (low ambient temperature, blowing air, auxiliary cooling surface, feedback MOS temperature below 125 ℃), can run continuously 80A, continuous high temperature work will reduce the ESC service life, it is recommended to keep the feedback MOS temperature below 105℃ in practical applications.

VI. Structural dimensional drawings

