

# **Product Specification**

**Product Name : ESC**

**Product Model: STONE 100A-M**

**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: 20-61V DC.

## III. Technical parameters

Item	Requirements	Remarks
Support lithium battery	6-14S(Above 65V prohibits startup)	Factory Inspection Items
Continuous operating current	100A	Specific thermal conditions
Instantaneous operating current (less than 3 seconds)	150A	
BEC Output Voltage	无	
Operating temperature	none	
Operating humidity	15%-85%RH	
preservation temperature	-10~+40℃	
Preservation of humidity	15%-65% RH	
waterproof rating	IP55	
Standby power consumption	≤10mA@60V	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	300ms(Default, customizable)	Throttle from idle to max
temperature protection point	125℃	
Input Signal Level	3.3-5V	
ESC weights	125g	± 2g
Product Size	90*40*19mm	± 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	12AWG	
Output phase line length	100 ± 5mm	
Signal Cable Specifications	UL1533-24AWG-gray	
Signal line length	530 ± 5mm	
Data Feedback Cable Specifications	PVC cable-30 芯-black, red and white	
Data Feedback Line Length	55 ± 5mm	
Shell material	Aviation aluminum alloy Surface anodized	

## V. Load test data(test condition: environmental temperature30℃, Supply Voltage48V, Data for reference only)

Load current	thermal condition	beta Time	starting temperature	Test results
50A	Shell without cover, frontal wind speed 13.2m/s	7min	33℃	Normal operation, MOS temperature 85℃, no more temperature rise in 4 ' 41
60A	Shell without cover, frontal wind speed 14.0m/s	7min	33℃	Normal operation, MOS temperature 97℃, no more temperature rise in 5 ' 30
70A	Shell without cover, frontal wind speed 14.6m/s	7min	34℃	Normal operation, MOS temperature 110℃, no further temperature rise in 6 ' 25
80A	Shell without cover, frontal wind speed 15.8m/s	7min	34℃	Working normally, MOS temperature 103℃, still warming up
100A	Shell without cover, frontal wind speed 16.0m/s	25s	33℃	Overheat protection, power reduction, MOS temperature 125° C
50A	In a carton box (15*15*5cm), no wind	2'40	31℃	
60A		2'10	33℃	
70A		1'35	33℃	
80A		1'30	30℃	

\* Specific heat dissipation conditions (low ambient temperature, blowing air, auxiliary heat dissipation surface, feedback MOS temperature below 125 °C), can continue to run 100A, 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

