

# **Product Specification**

**Product Name : ESC**

**Product Model: STONE 180A-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	160A	Specific thermal conditions
Maximum operating current (3 seconds)	180A	
Instantaneous operating current (1 second)	250A	
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	≤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°C	
Input Signal Level	3.3-5V	
ESC weights	232g	±2g
Product Size	120*49*23.5mm	±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	10AWG	Factory Inspection Items
Power cord length	150 ± 5mm	
Power cord color	Red (Positive) Black (Negative)	
Output phase line specifications	10AWG	
Output phase line length	100 ± 5mm	
Signal Cable Specifications	UL1533-24AWG-gray	
Signal line length	550 ± 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	

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

Load current	thermal condition	beta Time	starting temperature	Test results
100A	Shell without cover, frontal wind speed 19m/s	7min	31°C	Work normally, MOS temperature 80 °C, 5 minutes no longer rise in temperature
100A	In a carton box (15*15*5cm), no wind	3'25	31°C	Overheat protection, power reduction, MOS temperature 125° C

\* Specific heat dissipation conditions (low ambient temperature, blowing air, auxiliary cooling surface, feedback MOS temperature below 125 °C), can run continuously 160A, continuous high temperature work will reduce the ESC service life, it is recommended to keep the feedback MOS temperature below 105°C in practical applications.

## VI. Structural dimensional drawings

