Product Specification

Product Model：<u>TW-80A-12S</u>

Version：V2. 0

Date：<u>2025-06-28</u>

I. Purpose

This product specification provides a standard for product design, production, inspection, and sales.

II. Scope of Application

Electronic speed controller, suitable for input voltage: 20V - 48V DC.

III. Technical Parameters

Serial Number	Item	Requirements	Remarks
1	Supported Lithium Batteries (S)	6-12S	Factory inspection item
2	Continuous Output Current (A)	40A	With heat dissipation conditions
3	Instantaneous Output Current (less than 10 seconds)	90A	With heat dissipation conditions, can be no less than 3S instantaneously
4	BEC Output Voltage	无	
5	Weight of the Speed Controller (g) (including	149.33g	

	wires and connectors)		
6	Operating Environment Temperature (℃)	−20℃~+65℃	
7	Operating Humidity (%)	15%~85%RH	
8	Storage Temperature (℃)	−10℃~+30℃	
9	Storage Humidity (%)	15%~65% RH	
10	Waterproof Rating	IP68	
11	Standby Power Consumption	≤50mA @48V	
12	Throttle Travel Range	1000us − 2000us (throttle mid − point at 1500us)	Can be calibrated
13	Two-WayMotorRotation	1000us − 1500us for forward rotation / 1500us − 2000us for reverse rotation	
14	Maximum Supported Speed	100,000 RPM (electrical speed)	Mechanical speed = electrical speed / number of pole pairs
15	Throttle Refresh Frequency	50−400HZ	
16	Throttle Dead Zone Time	1%	
17	Upper Computer Data Reading	Monitor voltage, speed, temperature, etc.	General − purpose serial port module such as CP2102
18	Protection Functions	Stall protection / over − current protection / throttle loss protection	
19	Input Signal Level	3.3V−5V	

IV. Main Material / Part Specifications

Serial Number	Item	Requirements	Remarks
1	Cord Specification	12AWG	
2	Power Cord Length	200±8mm	
3	Power Cord Color	Red (positive) Black (negative)	
4	Power Cord Connector	-	
5	Motor Wire Specification	12AWG	
6	Motor Wire Length	100mm±5mm	
7	Motor Wire Connector	-	
8	SignalWire Specification	UL1533 - 24AWG - gray (wrapped shield)	
9	PWM Signal Wire Length	495±10mm	
10	Serial Port Signal Wire Length	65±5mm	
11	Signal Wire Connector	-	
12	Housing Material	Glossy black aluminum shell	

V. Finished Product Outline Drawing/Dimensions

Serial Number	Item	Requirements	Remarks
1	Length	83mm	±0.2mm
2	Width	35mm	±0.2mm
3	Height	22.8mm	±0.2mm

VI. Outline and Structure