Reflex Drive

RD A-Series V2 ESC 60A (FOC)

MADE IN INDIA



Field Oriented Control

Over Current Protection

Startup Protection

Over Temperature Protection

Stuck Rotor Protection

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Product Description:

RD A-Series V2 ESC 60A (FOC) is an advanced Electronic Speed Controller (ESC) designed for high-performance applications. Made in India, this model significantly enhances thermal and current handling capabilities. Housed in a sleek and durable Aluminium enclosure, the ESC offers excellent heat dissipation and protection against harsh environmental conditions.

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ESC Specifications

S. No.	Parameter	Requirement	Remark
1	Product name	RD A-Series V2 ESC 60A (FOC)	-
2	Voltage range	6S (22.2 V) - 12S (52.2 V)	-
3	Commutation	FOC	-
4	Maximum Peak Current	60 A (30 sec)	Tested with air flow of 9.2 m/s and 30 ℃ ambient temperature
5	Maximum Peak Power	2940 W (30 sec)	Tested with air flow of 9.2 m/s and 30 ℃ ambient temperature
6	Maximum Continuous Current	30 A (30 min)	Tested with air flow of 8.6 m/s and 30 ℃ ambient temperature
7	Maximum Continuous Power	1600 W (30 min)	Tested with air flow of 8.6 m/s and 30 ℃ ambient temperature
8	Weight	108 g	-
9	Dimension	90 x 37 x 20 mm	-
10	BEC output voltage	No	-
11	Operating ambient temperature (℃)	(-20 ℃) ~ (+65 ℃)	±5 ℃
12	Operating humidity (%)	15% ~ 85% RH	±5% RH
13	Storage temperature (℃)	(-40 ℃) ~ (+65 ℃)	±5 ℃
14	Preservation humidity (%)	15% ~ 85% RH	±5% RH
15	Standby power	≤ 100 mA	-
16	PWM range	1050 us ~ 1950 us	Fixed
17	Recommended PWM frequency	50 ~ 450 Hz	-
18	Driving method	PWM & CAN	-
19	Telemetry	CAN only	-
20	Opto-isolation	PWM only	-

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Protection / Warnings

S No.	List of Protection / Warning	Remarks
1	Over Temperature warning (OTW)	110 °C
2	Stuck Rotor at start-up	Yes
3	Bad Motor Phase	Yes
4	Over Voltage Protection (OVP)	70 V
5	Over Current Protection (OCP)	Yes
6	Signal Loss	Continuous beep (2-second interval)
7	Under Voltage Protection (UVP)	20 V
8	Start-up Protection	Yes
9	Throttle Not Reset to Zero	Continuous beep (rapid beeping)

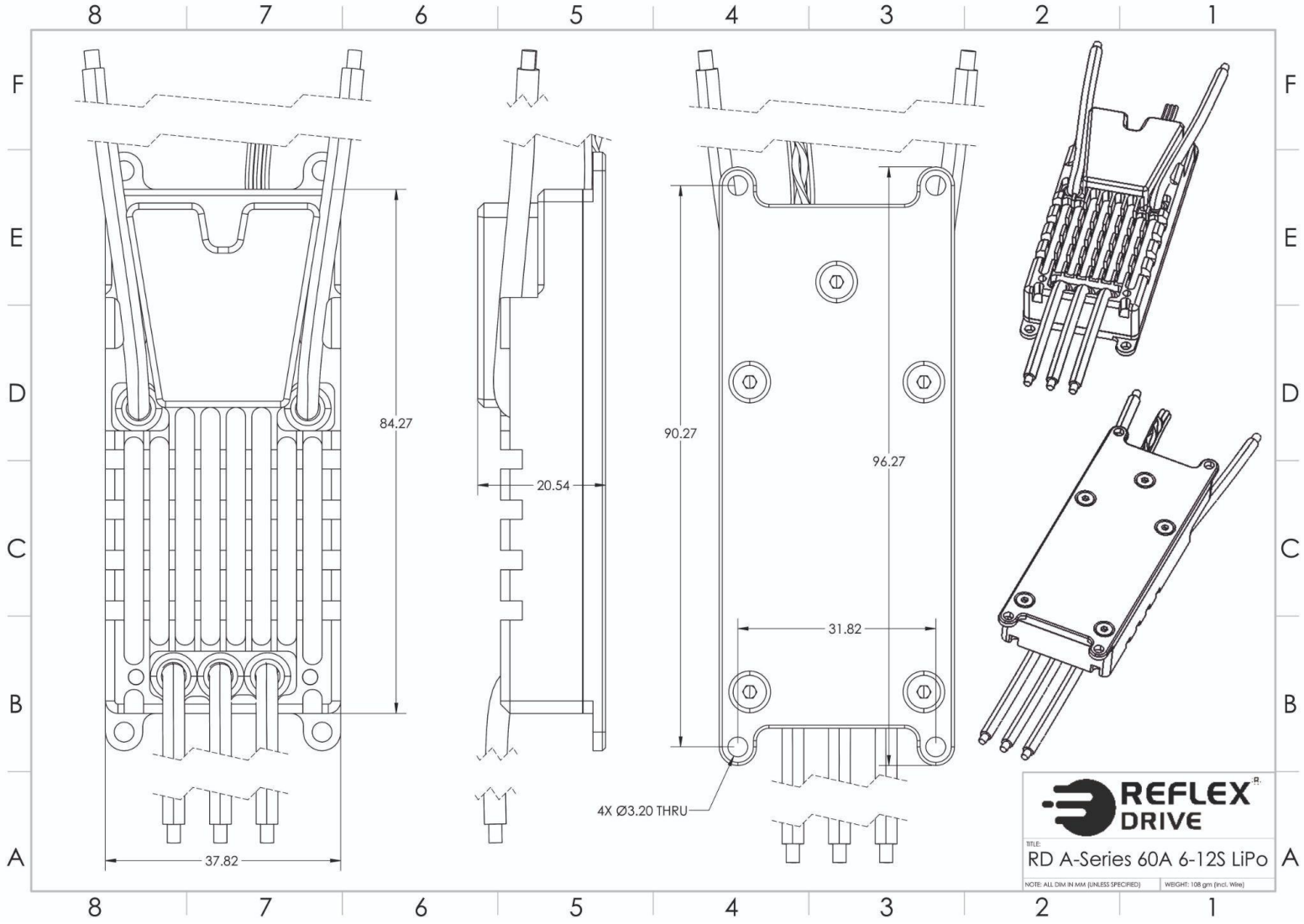
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Wire and Enclosure Specification

S. No.	Item	Wire colors / Size	Length	Remarks
1	Input cables	Silicone wires - red/black - 14 AWG	15 cm	±1 cm
2	Output cables	Silicone wires - black - 14 AWG	8 cm	±1 cm
3	Signal wires	Silicone wires - black, white (2P)	19 cm	±1 cm
4	CAN wires	Silicone wires - black, white, red (3P)	19 cm	±1 cm
5	Enclosure	Aluminium - black		

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Technical Drawing



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Steady State Test with Air Flow (8.6 m/s)

ESC: RD A-Series V2 ESC 60A (FOC)
Motor: HW X11
Propeller: HW 4314
Power source: 50.70 V SMPS
Room temperature & humidity: 31.7 ℃ & 56%

Time (min)	Current (A)	Power (W)	Voltage (V)	RPM	Internal ESC Temp (° C)	Enclosure Top Temp (°C)
0	0	0	50.7	0	17 °C	33.8 °C
1	31.6	1585	50.17	1940	80 °C	44.7 °C
2	32.03	1606	50.14	1957	93 °C	56 °C
3	32.53	1631	50.14	1955	95 °C	61 °C
4	32.32	1616	50.16	1967	101 °C	63 °C
5	32.52	1631	50.16	1963	102 °C	64 °C
6	32	1606	50.17	1973	103 °C	65 °C
7	32.98	1654	50.14	1950	103 °C	65.6 °C
8	32.66	1638	50.16	1956	103 °C	65.6 °C
9	32.74	1642	50.16	1966	103 °C	66.2 °C
10	31.66	1589	50.19	1980	103 °C	66.1 °C
11	31.96	1604	50.17	1975	103 °C	66.3 °C
12	32.24	1618	50.17	1966	103 °C	66.4 °C
13	32.07	1609	50.19	1945	103 °C	66.3 °C
14	32.67	1639	50.16	1976	103 °C	66.2 °C
15	32.68	1638	50.16	1971	103 °C	66.4 °C

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Steady State Test with Air Flow (8.6 m/s) - continued

Time (min)	Current (A)	Power (W)	Voltage (V)	RPM	Internal ESC Temp (° C)	Enclosure Top Temp (°C)
16	32.58	1633	50.17	1968	103 °C	66.6 °C
17	32.67	1639	50.16	1956	103 °C	66.3 °C
18	32.61	1636	50.16	1962	103 °C	66.2 °C
19	32.03	1607	50.17	1972	103 °C	66.1 °C
20	32.62	1636	50.16	1963	103 °C	66.1 °C
21	32.91	1657	50.16	1963	103 °C	66.1 °C
22	32.36	1623	50.16	1973	103 °C	66.2 °C
23	31.98	1609	50.17	1976	103 °C	66.1 °C
24	32.72	1641	50.16	1976	103 °C	66.5 °C
25	32.76	1643	50.16	1955	103 °C	66.5 °C
26	32.82	1647	50.17	1971	103 °C	66.5 °C
27	32.28	1617	50.17	1963	103 °C	66.6 °C
28	32.29	1620	50.17	1979	104 °C	66.4 °C
29	32.72	1642	50.17	1967	104 °C	66.4 °C
30	32.62	1636	50.17	1975	104 °C	66.5 °C
AFTER TURN OFF POWER SUPPLY						75.2 °C

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