REFLEX®
DRIVE

MADE IN INDIA

# COAXIAL PROPULSION UNIT

## RD I8 CPU




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**FOC**

Field oriented control

Email : sales@reflexdrive.in
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Lucknow, Hyderabad

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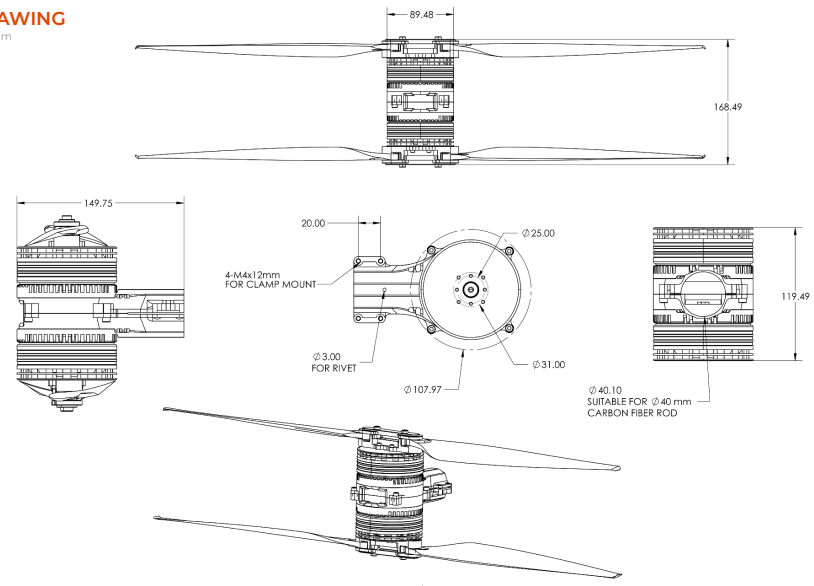

# RD I8 CPU

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- Integrated dual 8015 motor coaxial propulsion system with advanced RD FOC ESC.
- Delivers thrust with high efficiency and optimized power-to-weight performance.
- Engineered with enhanced thermal management for superior cooling during continuous heavy-load operation.

## PRODUCT DRAWING

Note: All dimensions in mm




## BASIC PARAMETER

| Product name | RD I8 CPU |
|---|---|
| Country of Origin | India |
| Compliant | IPC Class 2 |
| Throttle signal frequency | 50-450Hz |
| Weight (without propeller) | 1590 gm |
| Total weight (incl.propeller) | 1963 gm |
| Arm tube dia (OD) | 40 mm |
| operating Temperature | -20~50°C |
| **ESC** | |
| Voltage Range | 6S-12S (24V-58V) LiPo |
| Max. Input Current | 80A (180 sec) with airflow |
| PWM Range | 1050-1950us |
| BEC | No |
| PWM Input Signal | 3.3V-5V |
| Telemetry (over CAN) | Voltage, Current, Temperature, Motor RPM, Fault status |
| Communication Protocol | PWM, CAN |

| ESC | |
|---|---|
| Power Leads (AWG & Length) | 14AWG, 200°C & 1 mtr. |
| ESC Signal Control lead | 22 AWG, 2-wire JR (W-B) |
| ESC Telemetry lead | 22 AWG, 2-wire JR (R-B) |
| **Protection/Warning** | Overcurrent Protection |
| | Over temperature Indication |
| | Low Voltage Protection |
| | Throttle Loss Protection |
| | Stall Protection |
| **MOTOR** | |
| Motor KV Rating | 115KV |
| Stator Poles / Magnet Poles | 24/2 |
| Motor Dimension | Ø89.50mm x 48.55mm |
| Recommended Propeller | 3011(Foldable) |

## Safe Operating Notes

1. Ensure adequate air flow for ESC and motor cooling during continuous high-load operation.
2. Actual Performance may vary depending on altitude, ambient temperature , air density, propeller type, air flow conditions, and installation configuration.
3. Do not exceed rated voltage, current, and throttle limits. Exceeding limits may cause overheating or permanent damage.
4. It is recommended to maintain a 20-30% safety margin below maximum tested values for reliable long term operation.
5. Ensure all electrical connections (battery, motor, and signal wires) are properly secured and insulated. Loose or poor connections may cause voltage fluctuations, overheating, or malfunction of the ESC.

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# RD I8 Coaxial Performance Test

| Test | Steady State Test | Date:- | 25/05/26 |
|---|---|---|---|
| ESC | I8 Series | Max Current | 90A |
| Motor | RD 8015 | Thermal Conductivity | Enclosure |
| Propeller | HW 3011 | Power Supply | Battery |
| Motor pole | 36 | Signal input | CAN Throttle |
| Temp Tool | Thermocouple | Room Temp & Humidity | 34.5°C & 55% |
| Voltage | 49.61 | Motor kv | 115kv |
| Throttle Range | 1050 - 1950 | | |

| | | | | Motor 1 | Motor 2 | |
|---|---|---|---|---|---|---|
| **PWM** | **Current (A)** | **Power (V)** | **Voltage (V)** | **Telemetry RPM** | **Telemetry RPM** | **Coaxial Body Temp.** |
| 1050 | 0.15 | 7 | 49.61 | 0 | 0 | 40.1°C |
| 1100 | 0.28 | 14 | 49.59 | 0 | 0 | 40.1°C |
| 1150 | 0.43 | 21 | 49.59 | 396 | 408 | 40.1°C |
| 1200 | 0.56 | 27 | 49.58 | 450 | 450 | 40.1°C |
| 1250 | 0.95 | 47 | 49.54 | 696 | 690 | 40.1°C |
| 1300 | 1.88 | 93 | 49.49 | 942 | 936 | 40.1°C |
| 1350 | 3.23 | 160 | 49.42 | 1188 | 1182 | 40.1°C |
| 1400 | 5.37 | 264 | 49.20 | 1434 | 1428 | 40.1°C |
| 1450 | 8.22 | 403 | 49.00 | 1674 | 1680 | 40.1°C |
| 1500 | 12.05 | 587 | 48.70 | 1926 | 1914 | 40.1°C |
| 1550 | 17.26 | 834 | 48.34 | 2178 | 2166 | 40.1°C |
| 1600 | 23.56 | 1126 | 47.82 | 2424 | 2418 | 40.1°C |
| 1650 | 32.02 | 1513 | 47.25 | 2670 | 2664 | 40.2°C |
| 1700 | 42.20 | 1959 | 46.41 | 2916 | 2910 | 40.3°C |
| 1750 | 56.65 | 2528 | 45.41 | 3162 | 3156 | 40.5°C |
| 1800 | 72.98 | 3241 | 44.11 | 3396 | 3408 | 40.7°C |
| 1850 | 90.08 | 3870 | 42.96 | 3528 | 3648 | 40.9°C |
| 1900 | 90.50 | 3875 | 42.81 | 3516 | 3642 | 41.2°C |
| 1950 | 90.03 | 3843 | 42.69 | 3504 | 3630 | 42.1°C |
| **AFTER TURN OFF POWER SUPPLY** | | | | | | **56°C** |

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## DESCRIPTION OF LIGHT COLOR STATUS

| Flashing of LED | Indication | Recommended Action |
|---|---|---|
| 1 short flash | Over-Voltage detected | Change the battery (Ensure voltage is below 63V). |
| 2 short flash | Under-Voltage detected | Replace or change the battery (Ensure voltage is above 18V). |
| 1 long flash | Throttle signal lost | Verify signal wire connection to the flight controller.<br>Ensure remote controller and flight controller are powered on.<br>Check the resistance of the black and white wires, if short circuit is found, contact the after-sales support. |
| 1 long flash + 1 short flash | Throttle not at to zero position | Occurs during motor rotation.<br>Inspect aircraft battery and wiring.<br>Check for any short circuit in the system. |
| 1 long flash + 2 short flash | Mosfet temperature is too high (above 110°C). | Allow the power system cool completely, then restart. |
| 2 long flash + 1 short flash | ESC short-circuit | Inspect motor condition carefully. contact after sales service if issue continuous. |
| 1 long flash + 4 short flash | Stall protection activated | Check motor for foreign objects and remove them before operation. |

**NOTE: LED color is configurable through CAN as per given list.**

## DESCRIPTION OF WARNING TONE

| Trouble | Warning Tone | Possible cause | Solution |
|---|---|---|---|
| ESC can not start the motor | " Beep-beep-beep....." (rapid beeping) | The throttle stick is not at the lowest position or the throttle range setting is too small. | Move the throttle stick to the lowest position or re-calibrate the throttle range. |
| ESC can not start the motor | " Beep....Beep.....Beep..... " (2-second interval) | No output signal from the throttle channel of the receiver. | Check whether the transmitter and receiver are properly bound. Also check the throttle wire is correctly connected to the receiver channel. |

GREEN RED BLUE WHITE YELLOW Purple CYAN OFF LED OFF

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