REFLEX®
DRIVE

MADE IN INDIA

INTEGRATED PROPULSION UNIT

R8 IPU BASE (ESC and Mounting Only)



FOC
Field oriented control

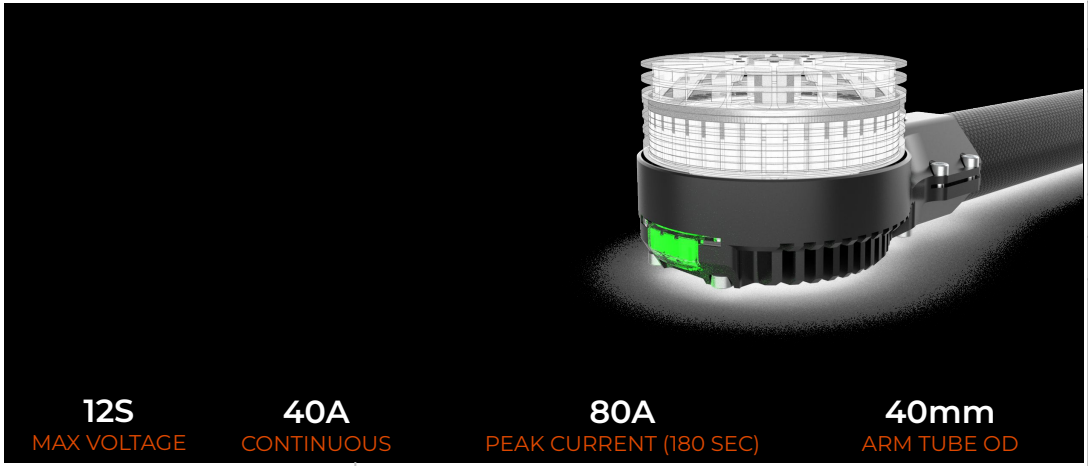
JSS 55555
JSS 55555 Certified

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R8 IPU

INTEGRATED PROPULSION UNIT
BASE (ESC AND MOUNTING ONLY)

- The R8 IPU Base is supplied with the FOC 80A ESC and motor mounting only. The motor is not included.
- Built for motor manufacturers and UAV OEMs who bring their own motor. The fully enclosed ESC ensures reliable protection in demanding environments.
- Made in India with non-China sourced semiconductors, for payload, agriculture, surveillance, crop monitoring and spraying platforms.

SCOPE OF SUPPLY

Included: IPU base with integrated FOC 80A ESC and motor mounting.

Not included: motor.

BASIC PARAMETER

Product name	R8 IPU Base
Country of Origin	India
Throttle signal frequency	50-450Hz
Arm tube dia (OD)	40 mm
Operating Temperature	-20~65°C
Compliant	IPC Class 2
Certification	JSS 55555
	. Mechanical Shock Test
	. Random Vibration Test
	. Resonance Search Test
	. Sinusoidal Vibration Test
ESC	**FOC 80A V4.2**
Voltage Range	6S-12S LiPo
Max. Input Current	40A continuous, 80A (180 sec) with airflow
PWM Range	1050-1950us (fixed or can't be programmed)
BEC	No
PWM Input Signal	3.3V-5V
Communication Protocol	PWM, CAN
Telemetry (over CAN)	Voltage, Current, Temperature, Motor RPM, Fault status

ESC	FOC 80A V4.2
Power Leads (AWG & Length)	In: 12AWG, 10 cm; Out: 14AWG, 12 cm
ESC Signal Control lead	2-pin (B-W), 19 cm
ESC CAN lead	3-pin (B-W-R), 19 cm
Protection/Warning	Overcurrent Protection
	Over temperature Indication
	Low Voltage Protection
	Throttle Loss Protection
	Stall Protection

Safe Operating Notes
1. Ensure adequate air flow for ESC cooling during continuous high-load operation.
2.Actual Performance may vary depending on altitude, ambient temperature , air density, 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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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 the battery (Ensure voltage is above 18V).
1 long flash	Throttle signal lost	. Verify signal wire connection to the flight controller. . Ensure remote controller and flight controller are powered on. . 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 zero position	. Occurs during motor rotation. . Inspect aircraft battery and wiring. . 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 to cool completely, then restart.
2 long flash + 1 short flash	ESC short-circuit	. Inspect motor condition carefully. contact after-sales service if the issue continues.
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.

GREEN RED BLUE WHITE YELLOW PURPLE CYAN OFF LED OFF

DESCRIPTION OF WARNING TONE

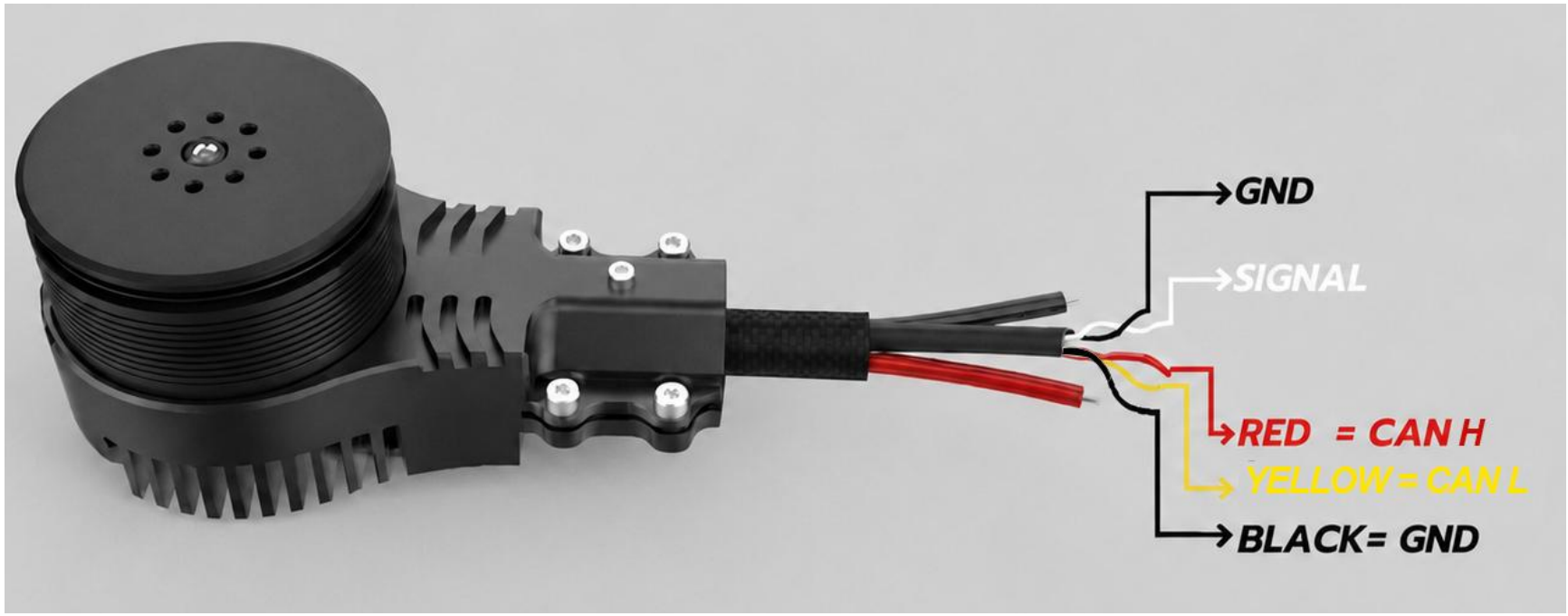
Trouble	Warning Tone	Possible cause	Solution
ESC can not start the motor	" Beep-beep-beep....." (rapid beeping)	The throttle stick is not at the lowest position or the throttle range setting is too small.	Move the throttle stick to the lowest position or re-calibrate the throttle range.
ESC can not start 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.

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Pinout Diagram



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