



iAMC600 Alpha

FALCON SERIES

KEY FEATURES



Designed to be lightweight with outstanding power density



Built for industrial strength



100% tested with individual performance reports



Self-cooling by design



ePConnected™ - Real Time Data Monitoring (RTDM)



Superior quality insulation provides long life and high reliability of windings

DATASHEET

Fly Higher. Fly Longer. Fly Smarter.

Uncrewed aerial vehicle (UAV) electronics have evolved to meet more demanding mission requirements. More intelligent energy supply and controller designs continually improve on efficiency, ensure reliability, reduce weight, minimize heat dissipation, and lower cost. The greater levels of energy and performance efficiencies delivered in the Falcon iAMC600 meets the most stringent payload demands and UAV design requirements.

Intelligent Air Motor Controllers

This USA-made ePropelled intelligent Air Motor Controller (iAMC600 Alpha) or electronic speed controller (ESC), works alone or alongside our powerful Falcon propulsion motors (PMs). Together, they create a high-performance, high-efficiency propulsion solution for your demanding UAV designs.

The iAMC600 transforms DC input voltage into a 3-phase AC output voltage and acts as the brain of the PM. iAMC600s deliver sensorless Field Oriented Control (FOC), detecting minute changes in the PM's direction, acceleration, and other variables to automatically adjust for optimized stability and precise flight control.



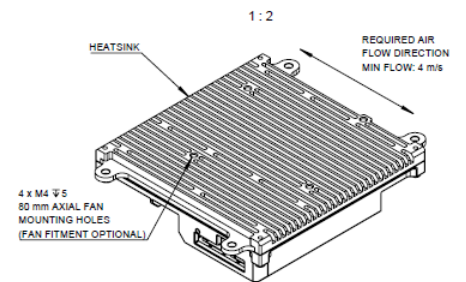
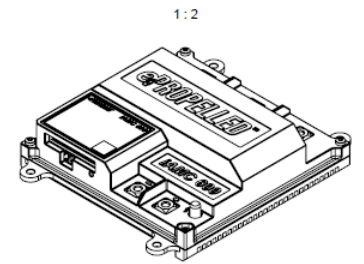
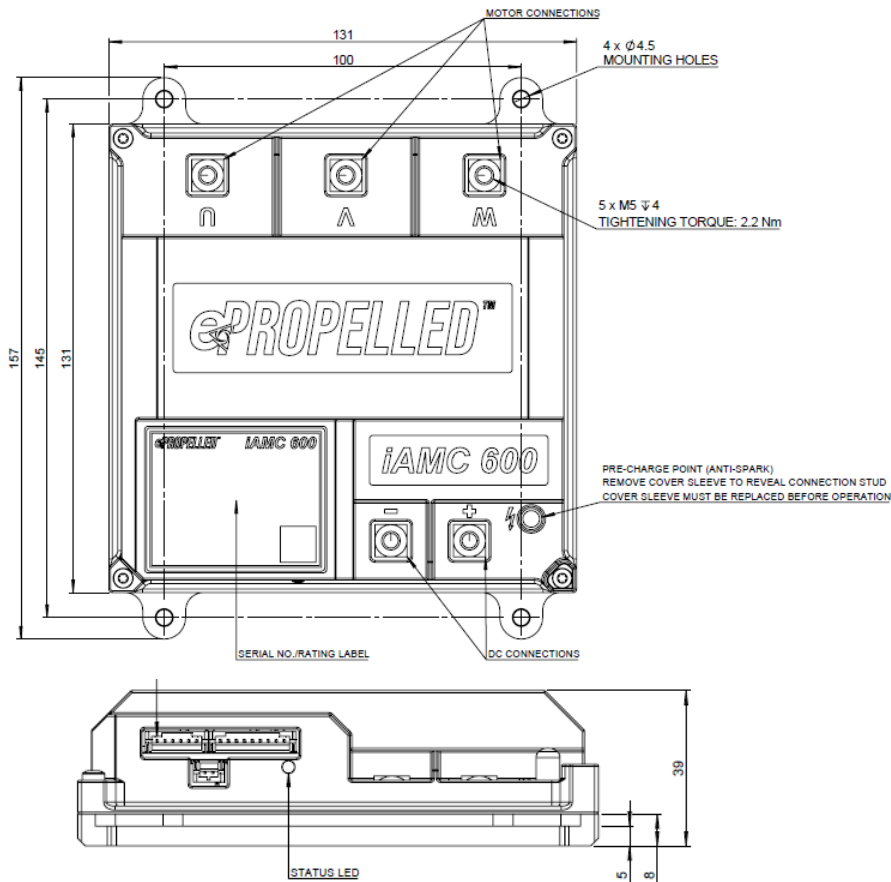
TECHNICAL SPECIFICATIONS

iAMC600	SPECIFICATIONS
PARAMETER	VALUES/DETAILS
Input voltage range	59.5V - 102V max
Input battery configuration	(14S* Lixx0) - (24S Lixx0)
Anti spark protection	Yes
Motor compatibility	Sensorless FOC
Peak Input Current (180s)	110A @96Vdc and 120A @ 84Vdc
Continuous Input Current	62.5A @96Vdc and 71.5A @ 84Vdc
Peak input power (180 s)	10,000W
Continuous input power	6,000W
Efficiency	Up to 98%
Maximum electrical frequency	2.67kHz
Ambient temperature range	-10°C to 50°C (14°F to 104°F)
Maximum internal inverter temperature	110°C (230°F)
Motor temperature measurement	Yes
Motor temperature protection	Yes (when enabled with power pullback)
Power connection	2 X M5 screw terminal
Motor lead	3 X M5 screw terminal
Communication	CAN 2.0A
Speed commands	Isolated PWM or CAN command
Real-time data monitoring (RTDM)	Yes (10 data points with speed, current, and temperatures)
IP rating	IP20
Cooling airflow for operation without a fan	4m/s minimum required
CAN connector	JST Header
Speed command connector	JST Header
Dimensions (L x W x H)	131mm x 157mm x 39mm
Weight	565g
Configurable parameters	24 parameters covering system, motor, inverter, PWM input & alert thresholds
Alerts via CAN bus	Alerts covering 18 conditions such as under-voltage, over-voltage, over-current, over-temperature, etc.,
Multiple iAMCs can be used on the same CAN bus	Up to 16 devices

Notes

- ▶ Lixx0 = LiPo or Li-ion.
- * With a 14S battery power limitations may occur
- ▶ Errors and omissions excepted

MECHANICAL DIMENSIONS



Note: All Dimensions are in mm

iAMC600 PINOUT

Connector Type	Pin Name	Pin Description
Power (M5 screw terminals)	U	U phase input connection for propulsion motor
	V	V phase input connection for propulsion motor
	W	W phase input connection for propulsion motor
	+	Positive input connection DC supply/battery
	-	Negative input connection DC supply/battery

iAMC600 PINOUT

PIN NAME	PIN DESCRIPTION
J1-1	CANH1
J1-2	CANL1
J1-3	GND
J1-4	ISO_GND
J1-5	ISO_PWM
J1-6	ISO_5V
J2-1	+5VO
J2-2	GND
J2-3	GPIO56_QEP_A_SHIFT
J2-4	GPIO57_QEP_B_SHIFT
J2-5	GPIO59_QEP_I_SHIFT
J2-6	GPIO7_SPI_MOSI_SHIFT
J2-7	GPIO6_SPI_MISO_SHIFT
J2-8	GPIO14_SPI_CLK_SHIFT
J2-9	GPIO15_SPI_CS1_SHIFT
J5-2	PTC+
J5-1	PTC-

iAMC600 K-TYPE THERMOCOUPLE INPUT

TC	Pin Name
+	Positive TC input
-	Negative TC input



Note: All specifications are subject to change without notice. For more information, including ordering products, please contact us at info@epropelled.com | Phone: +1 (603) 236 7444