Motor Specifications

November 2026

THE APX SERIES

AP_X80

Lower weight. More power. More torque.



70 kW peak power 93.9 hp	**115 Nm** peak torque @ 1,400 A phase
12 kg motor weight 26.5 lb	**5.8** kW per kg power-to-weight

01 Specifications

PERFORMANCE	
Peak power	70 kW (93.9 hp)
Peak torque	115 Nm (84.8 lb-ft) @ 1,400 A phase
Maximum RPM	13,000 RPM
Working voltage	80–120 VDC
Motor KV	85
Power-to-weight	5.83 kW/kg (7.82 hp/kg)
Torque-to-weight	9.58 Nm/kg
MOTOR DESIGN	
Stator winding	Distributed winding
Rotor	EBMX VV rotor: double-V interior permanent magnet (IPM)
Magnet type	50UH
Configuration	4 pole pairs (8 poles)
WIRING AND SENSING	
Phase wires	High-performance, direct-out for lower losses, double insulated with anti-abrasion coating
Terminals	Custom high-temperature lug terminal covers
Thermal probe	KTY84 (two installed, one for redundancy)
Position sensor	EBMX in-house ABI encoder
CONSTRUCTION AND SEALING	
Weight	12 kg (26.5 lb)
Construction	All-CNC design
Stator housing	Extruded, with an anodised surface for better heat dissipation
Side covers	High-performance powder coating
Colour caps	CNC-machined and interchangeable: blue, red, purple, silver, white or black
Sealing	Upgraded motor sealing with an IP-rated pressure release valve
IP rating	IP65
Temperature rating	180°C
Warranty	2 years

02 Design highlights

STATOR

Distributed winding

Every amp put to work. More torque, a silky-smooth, linear power band and cooler running at higher RPM.

ROTOR

New VV rotor

Two buried V-shaped layers of 50UH magnets per pole. A broad power band up to 13,000 RPM, with first-in-class SPM-level efficiency from an IPM design.

THERMAL

Cool by design

FEA-optimised for best-in-class thermal conductivity. The distributed-winding stator runs cooler and the anodised housing sheds heat faster.

SEALING

IP65, put to the test

True IP65 performance, tested under real-world quenching conditions. Better sealing all round, plus an IP-rated pressure release valve.

WIRING AND SENSING

Built for performance and reliability

Direct-out, double-insulated phase wires cut losses. Custom high-temperature lug covers, twin KTY84 probes for backup and an EBMX in-house ABI encoder.

CONTROL

Maximum power, maximum control

Next-generation throttle control that puts rider feel first.

03 Performance and setup

Real-world performance

Battery	Pack tested	Real-world power (input)	Power-to-weight
22S	Pouch cell, 76 Ah	**44–50 kW (59–67 hp)**	3.67–4.17 kW/kg
24S (recommended)	RS50 cells, 24S 12P	**55–60 kW (74–80 hp)**	4.58–5.00 kW/kg
26S	RS50 cells, 26S 12P	**Up to 70 kW (93.9 hp)**	Up to 5.83 kW/kg

Tested by EBMX R&D in real-world conditions. Results vary with battery, controller settings, gearing, rider and conditions.

Recommended gearing (24S)

Use	Rear sprocket	Top speed	Character
Supermoto / track (17 in wheel)	42–46T	100 MPH (160 km/h)+	Exceptional low-down torque
Off-road MX / trail (18 in rear)	46–48T	100 MPH (160 km/h)+	Great low-down torque
Off-road enduro	50–53T	90 MPH (144 km/h)	Huge low-down torque

Battery requirements

- **Recommended:** 24S 12P or 26S 10P high-performance cells for excellent performance.
- **Backwards compatible:** works with current 22S 76 Ah batteries, at lower output (44–50 kW).

CAUTION

The EBMX AP_X series are ultra-high-performance motors and demand skill and respect, particularly with high-performance batteries. Performance is significantly higher than previous EBMX XUB and XLB platforms, so take care when first riding. Not intended for road use. Ride within your ability and wear appropriate safety gear.

04 Interchangeable CNC colour caps



Black



Red



Blue



Purple

White and silver also available.