

A77

Brushless propulsion motor



INPUT VOLTAGE

45-110 V DC

RATED INPUT

120A

MOTOR MASS

4800±10g

Quality engineering. Service life up to 5000 hours.

Actual life depends on load, temperature, installation and maintenance.

01 / SPECIFICATIONS

Specifications and scope

For brushless motor systems with 45-110 V DC input. This manual provides product, installation and operating guidance.

No.	Parameter	Specification
01	Battery configuration	12S-24S
02	Rated input current	120A
03	No-load current (10V)	4.8A
04	Maximum current(KV70)	370A±5A
05	Internal resistance (temperature-dependent)	6.9mΩ±0.1mΩ *
06	Motor mass	4800±10g
07	Rotation (shaft-end view)	CW / CCW
08	Operating temperature	-10 °C-65 °C
09	Storage temperature	-10 °C-50 °C
10	Storage humidity	≤85%

Test and inspection conditions

Ambient test temperature: 25 ± 5 °C. Temperature rise: ≤65 °C. No-load vibration velocity: ≤1.8 mm/s.

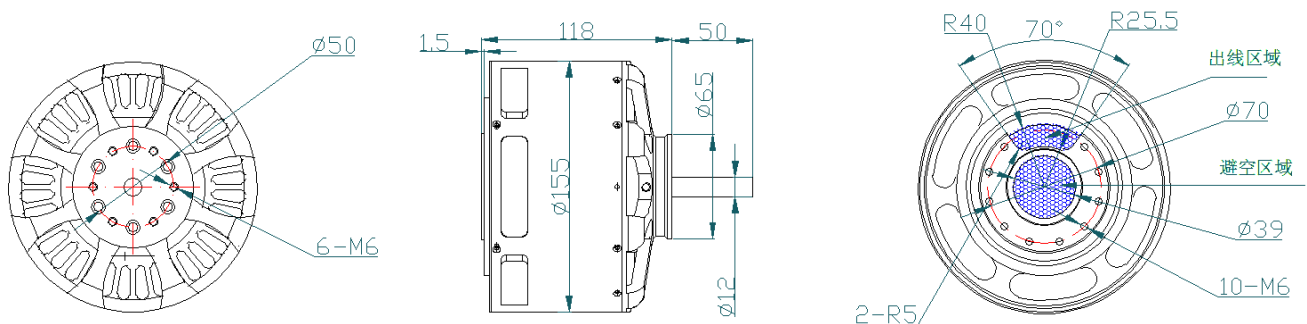
Dielectric test: source notation DC1000 / 5S / 5mA, between winding and housing, with no flashover.

Factory checks cover supply specification, no-load current, maximum current and resistance. Rated current is sample-tested on a dynamometer; mass is sample-checked with a scale.

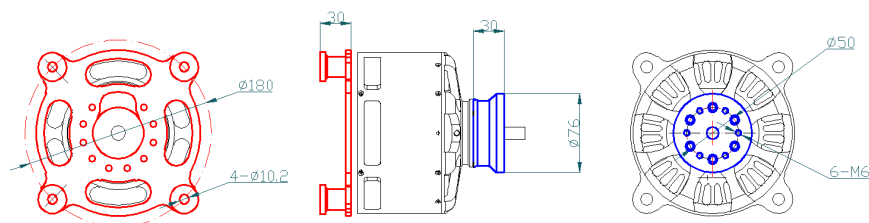
* Resistance units in the source require confirmation; see the document notes at the end.

02 / INSTALLATION

Dimensions and wiring

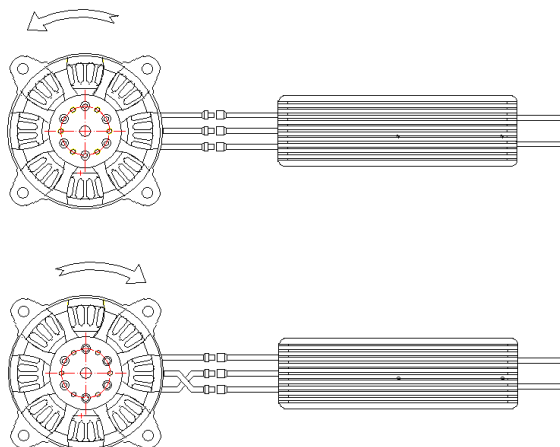


Mounting holes, outline and shaft dimensions are shown above. Dimensions and symbols follow the original drawing.



Optional base and accessories; inclusion depends on the confirmed configuration.

Changing rotation direction



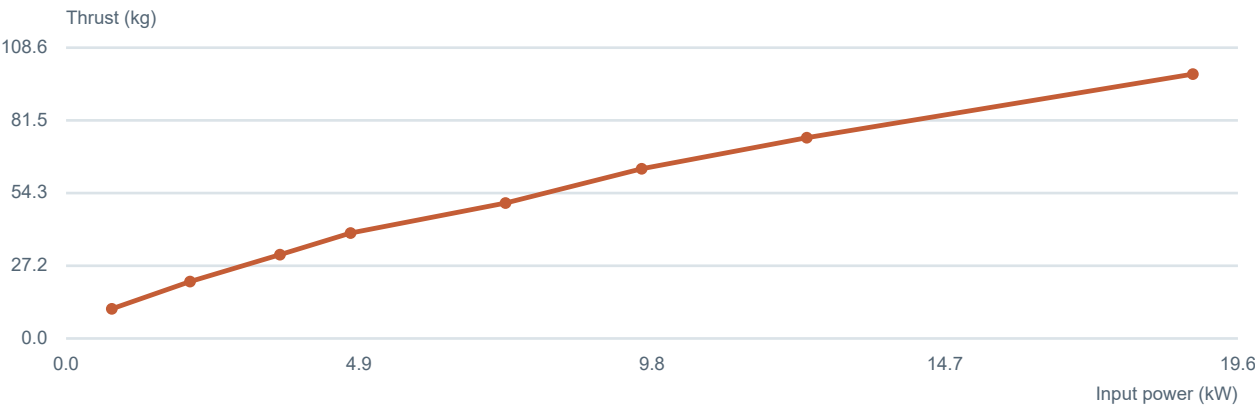
1. Confirm the rotation required by the propeller.
2. Leave the propeller off and connect the three motor phase leads to the ESC outputs.
3. Check rotation safely. To reverse it, isolate power, then exchange any two phase leads.
4. Install the propeller only after confirming the direction.

03 / PERFORMANCE 01

43 KV / carbon propeller

KV: 43 | Mass: 4800 g | Propeller: 5195 (carbon) | Test voltage: 85 V

No.	Current / A	Input / W	Thrust / g	Speed / rpm
1	9	765	11070	1139
2	24.4	2074	21260	1574
3	42.1	3578.5	31310	1861
4	56	4760	39390	2057
5	86.5	7352.5	50600	2387
6	113.3	9630.5	63400	2772
7	145.8	12393	75010	3258
8	221.8	18853	98770	3629



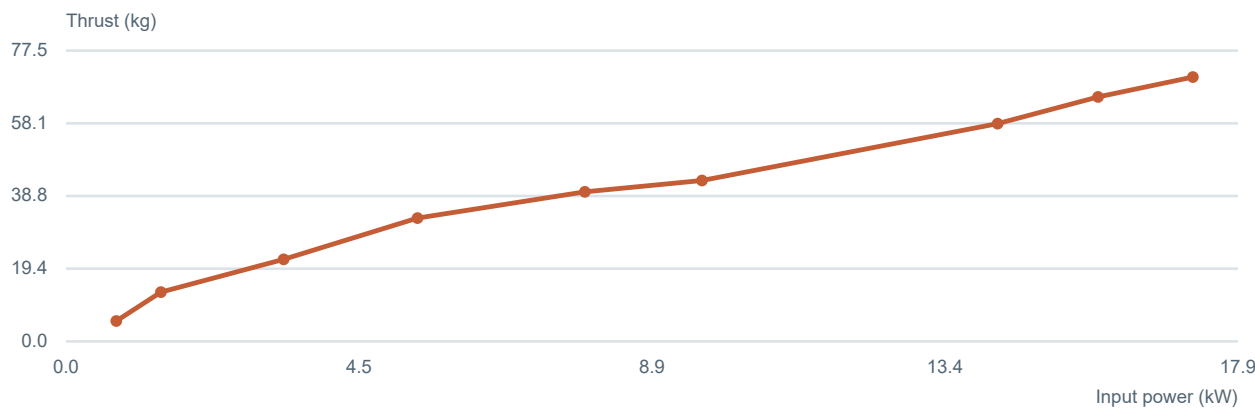
Test data are retained row by row from the source. The curve plots the listed input power and thrust. Test points do not establish continuous-duty ratings. Propeller notation follows the source.

03 / PERFORMANCE 02

60 KV / wooden propeller

KV: 60 | Mass: 4800 g | Propeller: 46x14 (wood) | Test voltage: 85 V

No.	Current / A	Input / W	Thrust / g	Speed / rpm
1	9	765	5440	889
2	17	1445	13140	1299
3	39	3315	21880	1790
4	63	5355	32880	2165
5	93	7905	39880	2395
6	114	9690	42900	2564
7	167	14195	58060	2892
8	185	15725	65180	2938
9	202	17170	70480	3074



Test data are retained row by row from the source. The curve plots the listed input power and thrust. Test points do not establish continuous-duty ratings. Propeller notation follows the source.

04 / OPERATION & CARE

Safety, operation and care

Installation, wiring and commissioning require competent personnel. Isolate power and confirm safe discharge before changing connections.

- 01** Supply voltage, service life and environmental conditions can lead to short circuits, fire or smoke. Provide appropriate electrical protection and guarding in the complete system. Stop use and contact technical support if safety is in doubt.
- 02** Do not damage windings, leads, edges or insulation during installation and wiring. Damage can cause electric shock, burnout or fire. Never touch rotating parts while energized.
- 03** This motor is intended for integration into other equipment. It does not carry a complete set of machine-level warning labels. The integrator must provide the necessary labels and guarding.
- 04** Keep the worst-case bearing temperature below the allowable upper limit of 100 °C. If it cannot be measured, verify service life in the complete system. Do not maintain a locked rotor or sustained high bearing temperature.
- 05** For custom speed control, verify the voltage range, load variation and control strategy. Check for abnormal noise, overheating and stalling.
- 06** Mount the motor correctly. Incorrect mounting can cause noise and vibration and shorten bearing life.
- 07** Do not lift or carry the motor by its leads or shaft. After a drop or equivalent impact, stop use and inspect for insulation and bearing damage.
- 08** Do not disassemble the motor. Safety and other performance are not assured after unauthorized disassembly.
- 09** Avoid corrosive or harmful gases and substances. The source lists H₂O, SO₂, NO₂, Cl₂, and silicone-, cyano- and phenol-based substances. Check compatibility with materials and conditions inside the complete machine to prevent corrosion and reduced life.
- 10** Store away from harmful gases at -10 to 50 °C and no more than 85% relative humidity. The source specifies sealed storage for up to six months under normal temperature and humidity conditions.

05 / TECHNICAL SUPPORT

Specification notes and support

- 01** The integrator must confirm compatibility with the complete machine in structure, dimensions, service life, noise, vibration and performance.
- 02** Operation outside the specified limits is outside the original specification guarantee.
- 03** Contact technical support before changing the machine specification or using the motor in another product.
- 04** Specification changes affecting performance or characteristics require samples and verification against mutually confirmed documents before implementation.
- 05** Components may be adjusted for performance improvements while meeting agreed specifications. Record critical delivery requirements in the mutually confirmed documents.
- 06** Agree in advance on any necessary requirements not addressed in this manual.
- 07** Resolve compatibility issues by mutual agreement using the confirmed specification documents as the basis.

Source-data verification notes

Source resistance: $6.9 \text{ M}\Omega \pm 0.1 \text{ M}\Omega$. Unit requires confirmation; the original value is retained.

The maximum-current specification refers to KV70; the tests refer to KV43 and KV60. Select data for the actual winding variant.

Business enquiries

Product selection · Project enquiries · Technical support

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Quality engineering. Service life up to 5000 hours.

Actual life depends on load, temperature, installation and maintenance.