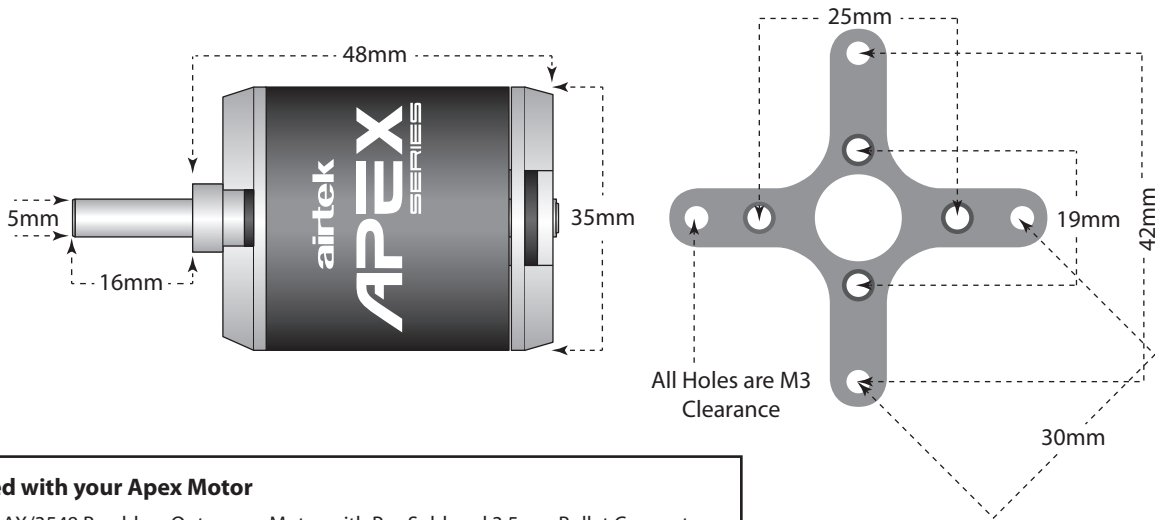


**Thank you for purchasing an Airtek Apex Brushless Outrunner Motor. This has been manufactured to the highest standards, and when used within the specifications should provide a long and trouble free service life.**

- Always use the correct size propeller for the highest performance. Use of an incorrect size propeller may damage the motor.
- Do not run the motor for more than 60 seconds full power on the ground. The motor unloads and receives maximum cooling during flight.
- Always ensure adequate cooling for your motor, particularly with in cowl installations.
- Always make sure the surrounding area is clear of debris and spectators, and your model is adequately restrained when powering up. ELECTRIC MOTORS CAN BE DANGEROUS - always handle them with respect.
- The quality of your ESC has a great impact on the performance of your motor. If your motor makes unusual sounds try re-timing your ESC.
- Never guess your set-up - use a Watt Meter, they are relatively inexpensive and you can be sure your motor is running within limits.
- Always use an ESC of at least the minimum Amp rating that is designed for use with a brushless motor. Where weight and space permit consider using an ESC of a higher rating.
- Never shorten the wires or cut off the connectors - de-solder them if required. Running the motor with shorter wires will result in damage.
- When connecting the 3 motor wires to the ESC check for correct rotation of the propeller. If the propeller rotates in the opposite direction to that desired, simply swap any two wires for correct rotation direction.



- Included with your Apex Motor**
- 1 x Apex AX/3548 Brushless Outrunner Motor with Pre-Soldered 3.5mm Bullet Connectors.
  - 1 x Rear Cross Mount
  - 4 x M3 Countersunk Mount to Motor Screws
  - 1 x 5mm Threaded Collet Type Propshaft Adaptor

**Mounting Your Motor**

The Apex series are designed as rear mounted motors using the supplied 'cross' mount. Mount the cross mount to the rear of the motor with the supplied counter sunk M3 screws. You may use a SMALL amount of thread locker (blue) but do not over-tighten the screws. Please note the mounting holes are not equidistant (19mm and 25mm). Then mount the motor to the model using the outer holes of the cross mount with M3 bolts (not supplied) as per your models instructions.

To front mount the motor the shaft can be reversed by releasing the grub screw on the front housing and removing the rear circlip. Please note this advice is for guidance only and we cannot warrant a motor that has been modified in this way.

**For Technical Specs and the correct ESC/Battery/Prop to use with your motor please refer to the motor you have purchased on the chart printed overleaf**

We wish you many enjoyable hours of service from your Airtek Apex Motor. For a full range of products to compliment your motor please visit [www.airtekhobbies.com](http://www.airtekhobbies.com)

## Brushless Outrunner Motor Comparison/Specification Chart

Please use this chart in conjunction with the notes above the columns

Model	Max Watts (W)	kv (rpm/v)	Max Current (60secs)	Continuous Current	Rec ESC	Resistance m(Ω)	Idle Current	Cells Lipo	Cells Nixxx	Weight (grams)	Recommended Prop Range	Model Weight Light Trainers/Gliders	Model Weight Sport Aerobatic	Model Weight 3D/Extreme Aerobatics	I.C. Eqp (cu.in) 2 st	Shaft Dia.mm
AX/2822/1100	100	1100	9.9A	6.7A	20A	0.192	0.4A	2-3	6-9	39g	9x5/7x5	<550g	<400g	<250g	.06-.09	3.175
AX/2822/1450	160	1450	14.7A	11.6A	20A	0.112	0.5A	2-3	6-9	39g	8x6/7x4	<850g	<580g	<330g	.06-.09	3.175
AX/2822/1800	200	1800	16.5A	12.5A	20A	0.112	0.5A	2-3	6-9	39g	8x4/7x3	<900g	<630g	<370g	.06-.09	3.175
AX/2826/1000	150	1000	13.8A	10.8A	20A	0.127	0.5A	2-3	6-9	54g	11x7/10.5	<800g	<550g	<310g	.09-.15	3.175
AX/2826/1400	205	1400	18.9A	13.0A	20A	0.078	0.9A	2-3	6-9	54g	9x4.7/7x4	<950g	<650g	<370g	.09-.15	3.175
AX/2826/2200	340	2200	31.5A	26.0A	30A	0.033	1.8A	2-3	6-9	54g	7x4/7x3	<1200g	<850g	<450g	.09-.15	3.175
AX/2836/880	240	880	16.8A	14.8A	30A	0.107	0.8A	2-4	6-12	70g	12x6/9x6	<1400g	<1000g	<600g	.19-.25	4.0
AX/2836/1120	330	1120	23.2A	22.0A	30A	0.070	1.1A	2-4	6-12	70g	11x7/9x5	<1600g	<1100g	<620g	.19-.25	4.0
AX/2836/1500	360	1500	25.4A	24.5A	30A	0.048	1.7A	2-4	6-12	70g	9x6/7x4	<1750g	<1250g	<650g	.19-.25	4.0
AX/3536/1100	440	1100	29.8A	26.0A	40A	0.046	1.3A	2-4	6-12	102g	10x6/11x5.5	<2500g	<1750g	<1000g	.25-.32	5.0
AX/3536/1450	650	1450	45.2A	42.7A	50A	0.023	2.0A	2-4	6-12	102g	8x5/9x6	<2900g	<2350g	<1200g	.25-.32	5.0
AX3542/1000	540	1000	47.5A	43A	60A	0.039	1.8A	2-4	6-12	136g	12x5/11x7	<2700g	<1900g	<1050g	.32-.36	5.0
AX3542/1250	660	1250	46A	42A	60A	0.021	2.0A	2-4	6-12	136g	10x6/11x5	<3250	<2300	<1250	.32-.36	5.0
AX3542/1450	690	1450	38A	35A	60A	0.019	2.1A	2-4	6-12	136g	8x7/9x6	<3400	<2400	<1350	.32-.36	5.0
AX3548/790	720	790	39.5A	35A	60A	0.040	1.2A	3-5	9-14	152g	13x8/12x7	<3550	<2550	<1400g	.36-.40	5.0
AX3548/900	770	900	42.5A	40.0A	60A	0.036	1.5A	3-5	9-14	152g	13x7/12x7	<3800g	<2700g	<1500g	.36-.40	5.0
AX3548/1100	910	1100	50.3A	46.0A	60A	0.024	2.2A	3-5	9-14	152g	12x6/11x8	<4400g	<3100g	<1700g	.36-.40	5.0
AX4250/600	1055	600	46.5A	44A	60A	0.052	1.7A	3-7	N/A	220g	13x10/14x8/14x10	<5200g	<3700g	<2050g	.40-.45	5.0
AX4250/800	1010	800	50A	47.5A	60A	0.050	2.5A	3-7	N/A	220g	13x8/14x7/12x10	<5000g	<3500g	<1950g	.40-.45	5.0

The specifications above are supplied in good faith. As with all electric systems there are multiple combinations of Motor/ESC/Props and Batteries available, the change and variation of any of these (even the same size/specification from different manufacturers) will have an effect on the parameters/performance you can expect. We STRONGLY recommend the use of a wattmeter. These relatively inexpensive devices will not only bring some science into your hobby, allowing you to optimise your set up for better performance and duration, but will check if you are running within the limits of your equipment. Your first fired motor or burnt ESC will pay for a wattmeter! If you don't use a wattmeter always check the temperature of your Motor/ESC after a run. Warm is OK - hot is NOT!

**Note 1:** These are the MAXIMUM Watts the motor is capable of attaining and not what you will normally get in a real life situation. The cell count and C rating of the battery will both have an effect on the Watts attainable. An average sport lipo can lose around 1 volt per cell under load and this must be factored in when calculating the realistic maximum watts you can attain. The calculation for Watts is Volts x Amps. Let us take the AX/2836/1120 as an example when run with a 3 cell lipo is 11.1v. However if we take the rule of thumb of a loss under load of 1v per cell that would make a voltage of 8.1v for our calculation (11.1v - 1.0v - 1.0v = 8.1v). Looking along the table the recommended CONTINUOUS Current is 22.0A. Therefore our calculation would be 8.1(v) x 22.0(A) = 178Watts on 3 cell. To calculate the Watts on 4 cell it would be 10.8(v) x 22.0(A) = 238W. If you use a higher C rate battery that loses less voltage under load then these figures can be improved on. Let's take the 3 cell figure again but assume there is no voltage loss under load then the calculation would be 11.1(v) x 22.0(A) = 244Watts. In truth most set ups will fall somewhere between these figures, and will of course be greatly affected by propeller choice. You must not however exceed the Maximum Watts in this column.

**Note 2:** Current figures are determined by the manufacturer and are really self explanatory. The maximum current figure is the maximum safe continuous current.

**Note 3:** This is the recommended ESC for the motor on all voltages. Where space and weight permit consider using an ESC with a higher rating than recommended (i.e. where a 30A is shown fit a 40A) to give plenty of leeway.

**Note 4:** Props are shown as a guidance/starting point. The prop is the single most important variable on your brushless system. The loading on your motor, and parameters such as AMP draw are (in broad terms) determined by the prop. A higher Kv motor will spin a smaller prop at higher revs, and a lower Kv motor will spin a larger (and generally more efficient) prop at lower revs. Props from different manufacturers with the same size can give very different readings (which can easily be determined by the use of a wattmeter), so experiment to find the best combination for your model. As a very general rule of thumb where the specified props is, for instance, an 11x5 and you wish to swing a 10" diameter but want to retain the approximate same load on your motor you would compensate for the loss of diameter with an increase in pitch, so from 11" to 10", and 5" to 6" i.e. your 11x5" would be substituted by a 10" x 6". With folding props allow for the diameter of spinner used. An increase in spinner diameter effectively means an increase in prop diameter which must be factored in when choosing a prop size. **Always remember, less cells = larger prop, more cells = smaller prop.**

**Note 5:** A very common question asked about brushless motors is what weight of model they will power. Again, there are so many variables with model design that a definitive answer can't always be given. We have provided 3 broad categories of models and quoted an approximate average weight of model the motor, when propped correctly, will fly well. However, these are mathematical calculations and do not take into account the type of model and the motor that would be most efficient. For instance you may have a glider weighing 1200g so looking at the chart the AX/2826/2200 would seem a good choice. The sums are correct but this is totally the most unsuitable motor for this type of model because it is a High kv motor which spins a small prop at high RPM which is exactly what you don't want for this type of model. So do use this as a guide but bear in mind you need to select a motor that is suited to the type of model it is intended for.

**Note 5:** Electric motors and i.c. engines are two completely different forms of propulsion and as such direct comparisons are often not the most appropriate way of selecting a motor. However we appreciate that brushless motor sizes are very confusing for those coming over from i.c. powered models so have included this information to give you a general approximation. Electric motors are much more flexible than i.c. engines, being able to utilise a broader range of props. It is possible to choose a motor that turns a same size prop at the same revs as an i.c. engine, but you will get a much better performance if you utilise the flexibility of brushless motors correctly.