

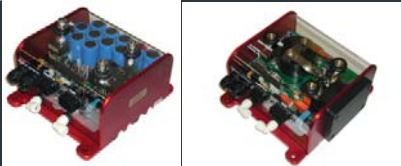
Metalized Polypropylene Power Ring Film Capacitor

Ring of Power

For those of you who like to be thrill seekers and build your own motor speed controller. The Power Ring Film capacitors provide a fantastic option to replace the ubiquitous aluminium electrolytic capacitors that make up the DC Link Capacitor Bank in all DC and AC speed controllers.

Metalized Polypropylene cap technology allows for smaller physical size – reduced cooling systems and longer operation life for EV speed controllers.

These capacitors are the heart of the Soliton1 controller, and what have the guys at Netgain been doing. Original (L) shows lots of electrolytic caps the latest (R) has a big round thing! – Could it be a power ring cap?



Ratings – 250v to 1500v DC – Ripple Current from 40 to 5400A RMS, 10K to 100Khz switching.



SBE inc. - MPRFC

SBElectronics inc. have developed a range of high power, high ripple current, thin film metalized polypropylene capacitors that are ideal for EV speed controllers. The main difference between these and conventional Electrolytic capacitors is that the change in temperature while handling high current discharge is only a fraction of standard capacitor's Δt . For example, at 200Amps constant operation Electrolytic Caps have a temperature rise of approximately 75°C – Power Ring under the same conditions rise only 5°C. This obviously extends the life of the capacitors in the controller as well as the controller requiring much less cooling.

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Energy Efficient Motorsport

Four British-designed, two-seater EVs are being used in the trial, the Westfield Sport E (right). It's the slowest of the bunch 160kph and its LiPo batteries offer the least range of 160km. It'll go from zero to 100kph in about seven seconds through its rear-wheel direct drive motors(2). Secondly the Ecotricity Nemesis gets from zero to 100Kph in about four seconds, top speed 217 kph and a 250kWh Lithium polymer battery. Next the four-wheel-drive Delta E-4 Coupe has 2000Nm of torque, a 50kWh LiPO Battery, range up to 320 km per charge and its Oxford Yasa electric motor takes it from zero to 100kmh in less than five seconds, top speed is 223kph. The last of the four sees a return of the Electric Lightning GT with 4,400 Nm of torque, range of 289km from the Lithium Titanate batteries, 100kmh in less than five seconds and top speed of 209kph. "Nice Selection!!"

UK Electric Vehicle Trial



A consortium of specialist UK vehicle manufacturers, an eco-friendly vehicle rental company and a green consultancy has just launched a project to road test 14 high performance electric vehicles over the next 12 months. All performance parameters will be closely monitored as the drivers put the vehicles through the same kind of driving conditions encountered by users of ICE road cars. The accumulated data will be used by government officials to help in the establishment of green transport manufacture in the UK. The trial is part of the Energy Efficient Motorsport program, established in 2004 to accelerate the development and public acceptance of green automotive technologies and aims to showcase high performance, low emission vehicles that have been designed and built in the UK.



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<http://www.ata.org.au/branches/geelong-ev-group/>



ALTERNATIVE TECHNOLOGY ASSOCIATION : Promoting energy saving & conservation to households

GM-Segway Puma

This interesting little device is a GM/Segway marriage that has resulted in an electric-powered urban vehicle called the Puma. The Puma seats two people, and is said to reach a top speed of 35 miles per hour. The vehicle can go 35 miles before needing a recharge



The fun thing is that using the GM developed OnStar navigation systems and the integrated robot-driving technology, the Puma could theoretically drive by itself and even receive messages from other cars to help it avoid potholes. It could drop you off at work, find a place to park itself and then come and pick you up at the end of the day at a set time. Imbedded internet connectivity would allow Web surfing and all standard features offered from your average portable handheld device while on the move.



eRuf Stormster



German Porsche tuner Ruf, has revealed its second attempt on the Porsche EV theme. It's based on the Cayenne, it's called the Stormster and Ruf says that it's the first all-electric SUV.

Ruf displayed its first electric Porsche, a 911 back in October 2008, but fitting sufficient batteries to give the car a decent range was difficult. Using the Cayenne's somewhat larger frame gives Ruf's engineers a lot more room to pack in the necessary cells.

The eRuf Stormster is powered by a 270kW 3 phase Siemens AC motor that was initially used for the 911-based sports car. Unfortunately, the Stormster's somewhat portly physique limits performance.

In fact, at 2670kg, the Stormster is 315kg heavier than the largest "ICE" Cayenne.

In spite of the extra kilo's the Stormster can still get from 0-100kmh in around 10 seconds with a top speed of 150kmh, and enough Lithium ion batteries to run for 200km between plug stops. The lithium ion cells are supplied by Li-Tec Battery Germany. Li-Tec is the first European manufacturer of lithium ion cells.



The Ruf Stormster had its first public outing, not at a glamorous motor show, but at the European Climate Change Conference in Copenhagen, where four of them chauffeured delegates around the venues.

A Different Shape of Things to Come??



EV Roadside Assist

Early June saw the Japan Automobile Federation (JAF), in association with Nissan; begin testing a roadside service vehicle equipped with a charger, to assist stranded EVs. Correspondingly, the American Automobile Association (AAA) is about to launch a similar project, in which mobile charging units will be available in six test regions – this marks a significant increment along the road to mass adoption of the EV in North America. You can now drive with confidence in your EV knowing that a call to the local motoring association will be able to get you going again. (Not that a long extension cord couldn't do the same thing! But mindsets are mindsets.)

In Australia, "Club Assist" have released mobile EV charging trailers that are to be supplied to local motoring clubs – (RACV etc) to enable roadside assistance to EV's



The connector of choice is the J1 772 standard on the Nissan i-MiEV, Tesla and Chevy Volt.

If you need a quick recharge, Club assist has a Level II EV Charging Station located at 237-239 Frankston-Dandenong Road, Dandenong which can recharge a flat i-MiEV in about four hours. Australia's first Level III Fast Charger is installed in Adelaide for Mitsubishi Motors. More Level III Fast Chargers are expected to be installed before the end of the year, including one at NRMA's North Strathfield site.

This Month's Q&A Technology Tip

Q: If price is not a factor, what are the latest & greatest EV batteries currently available.

A: Toshiba has released a battery for mobile devices including EV's, that can reach 90% charge in 5 minutes, (if you can find a 1600A, 415V plug) – If those figures sound familiar that's

because the technology used is Lithium Titanate, same chemistry as the Altairnano batteries used on the UK Electric Lightning EV. However the Toshiba cells hold a whopping 100W/kg, 35% higher than Altairnano cells, this means 35% less weight for the same range or 35% greater range.

Not a bad improvement!

