ISSUE
37
March-2012

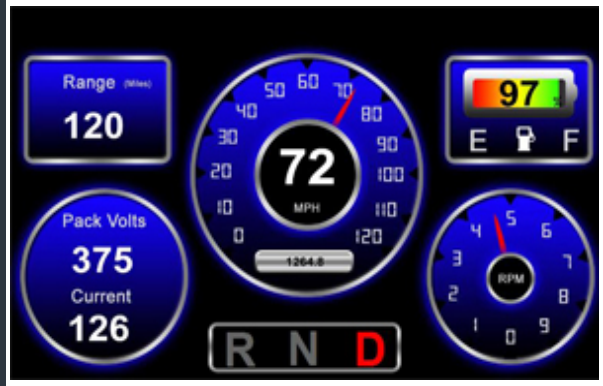
MONTHLY JOURNAL OF THE ATA
ELECTRIC VEHICLE INTEREST GROUPS
GEELONG & MELBOURNE

MiMod

EVInstruments

www.evinstruments.com started out as a hobby two years ago and is now finding rapidly increasing demand for its rather unique range of amazing array digital electric vehicle displays. What started as an effort by a key employee to know what was happening to the battery back in his converted electric car has grown over time into a serious business opportunity.

Drivers operating a MiMod equipped EV must first enter their password for access to the MiMod system. Multiple drivers can be authenticated. The MiMod software functions within a Microsoft Windows embedded operating system in the MiMod micro-computer, which also features a number of connectivity ports and WiFi capability.



Now this is an interesting development, EV instruments (Kansas City Missouri) have produced a range of touch screen instrument especially for EV conversions. The MiMod connects to the battery pack and motor to provide RPM, individual cell voltage, current and state of charge. Also included is temperature, speed, GPS, MP3 player. Display of indicators – warning lights – direction (forward – neutral – reverse), Radio, reverse camera and control of up to 32 activation relays for just about everything you can imagine on your EV project, you can even program the function of the touch screen switch to suit the relay. Lastly there is an inbuilt security system.

On 6 to 12 inch touch screen LCD. Pricing for a basic kit including either a 7" LCD touch screen or 10" Tablet PC – Controller with Bluetooth and interface pod to the EV's systems is $1899 (7" has a reverse camera) not bad for all the included functionality.

Taxi

It is expected that the E Taxi's will be in abundance before the 2012 Olympics that will meet London's Mayor Boris Johnson's proposed new clean air standards. Ongoing trials are designed to make sure the EV's can deal with the rigors of London taxi life.

However it's not just London trying to look green that is supporting suburban EVs with production of the Vito EV being conducted at the Mercedes-Benz plant at Vitoria in the Basque region of Spain where full EV retraining is proceeding a a fast rate, and production technology are receiving financial support from the regional government.

In Germany the Federal Ministry for the Environment, Nature Conservation and Nuclear Safety (BMU) is providing subsidies to support the efforts of Mercedes-Benz Vans in the areas of research and development.

Mercedes Vito E CELL Taxi

Although announced some little time ago, and has been roaming British streets as a delivery van for almost a year now, the E CELL has been released as a London Taxi. This plug-in electric conversion of the Mercedes Vito van can carry up to six people and has a range of 120 kilometers on a single six hour charge.

The E-Vito taxi uses a 70kW, 300Nm Zytek electric drivetrain which slots into the engine bay with only minor modification to the ICE engine mounts. It only requires water, traction and low voltage connections to be added to make it go; it talks directly to existing vehicle systems such as ABS, ESP and onboard diagnostics.

The E-Drive is connected to a Vocis/Graziano front mounted transaxle. This conversion to front wheel drive is in order to free-up space for the under floor mounted Li-Ion battery pack.

The Taxi also includes steerable rear axle which allows a 25 ft (7.6 m) turning circle - something that's not only useful in London's poky streets, but also required by all licensed black cabs.

Mercedes CITAN

Keeping going with the Mercedes flavour this month, (mainly because they are releasing a lot of information regarding their EV variants), is the prototype CITAN.
The CITAN will come in a pure-electric version and interestingly the vehicle is a combined effort with Mercedes-Benz teaming up with Renault to produce it. This alliance may appear rather odd, but Daimler – Mercedes' parent company – and Nissan-Renault are already linked with the development of the Smart Fortwo, which will also boast an electric variant.

The electric CITAN will be based on the Renault Kangoo Z.E. van and features the same 45kW electric motor and lithium-ion battery pack, delivering 160km range and 130kmh-limited top speed. Petrol and diesel-powered versions of the CITAN will also be available.
Release seems to be as soon as possible to take advantage of EV tax breaks.

SLS AMG E-Cell Gullwing

The electric supercar is almost here! Mercedes-Benz has shown off its radical SLS AMG E-Cell, which borrows the sexy styling of the born-again Gullwing supercar but replaces that car's V8 engine with a bank of batteries and four electric motors.
Mercedes-Benz AMG executives have already said the upcoming electric Gullwing will be as quick as the V8-powered SLS AMG it's based on, despite the additional 450kg of weight courtesy of the batteries.
Due on sale in 2013, the first driveable E-Cell sports is doing the round of the European press.
The four electric motors (two at each axle, meaning the electric Gullwing is all-wheel-drive) pump out an impressive 880Nm of torque which helps propel the E-Cell from a standstill to 100km/h in only four seconds. Peak power is a hefty 400kW, giving it almost as much power as the V8-powered Gullwing it's based on.
Lithium polymer batteries store a combined 48kWh of power. There are two boxes of batteries – one behind the cockpit and one where the traditional driveshaft would sit along the length of the car in the centre of the floor.
The rearmost battery pack helps keep the weight balanced, the central pack helping to keep the centre of gravity low. All that electricity isn't just going to the wheels, though.
There's a very contemporary looking 10-inch touch-screen display in the centre console, and the gauges look reminiscent of a space shuttle's control system, as though straight out of a sci-fi movie.
Keeping all the electrics cool (or, conversely, keeping them warm when needed) are a pair of separate cooling circuits that help maintain a safe operating temperature in the battery banks. How Much?
If you have to ask you can't affort it!!

The Shape of Things to Come??

RinSpeed Dock+Go

Coming up at the Geneva Motor show (March 8 to 18 – if you're in the area!) is a revamp of the electric Smart Car (Rinspeed has been playing with SMART EV's for a while); where a 600mm long pod can be attached of the rear of the car to provide either more cargo space or, more importantly, provide extra batteries to extend your driving range. Future versions are rumored to incorporate either fuel cell power modules or ICE range extenders. When it's not bolted to the car, the module could also act as an auxiliary power source for your home. Bear in mind, however, that this power pack only weighs 130kg about 9kWh so it's not exactly like having your own hydroelectric plant in the garage but you could certainly make use of that low cost off peak energy stored overnight and drive the house with it during the day.
As to performance, this is a tiny electric, so it isn't intended to take on the Nürburgring Ring. Acceleration is 0 to 60 in 13.3 seconds with a top speed of 130kmh without the extra batteries and 145kmh with them. The concept SMART has a small Battery, with battery-saving charging strategies and just 9kWh of energy, enough to cover all the daily trips to the office and for shopping. Should more be required, you can buy or hire a suitable pod to fasten to the EV and away you go.

This Month's Q&A Technology Tip

Q: I have a 3 phase system available for battery charging, but would like to use 240v to charge as well. Do I need two chargers?

A: NO! –EV_WORKS has announced that they have just become agents for the New Zealand firm ProTech's combination 1/3 phase charger. It will charge 126v to 176 volt packs and output 1 to 15 Amps (1 Phase) 3 to 30 Amps (3 Phase). So for those who do have 3 phase at home but would like to charge from 240V while out there is an option. Price $2450 +gst and freight.

See http://www.evworks.com.au/index.php?product=CHG-ProTec-144