

M-troniks Modelsport Technic.

RRC takes a look at M-troniks, and reviews their latest speed controllers, the budget ST400PB and the SM800HF Pro.

M-troniks was founded in August 1989 by Mike Merrick in Otley, West Yorks. Some close friends of Mike's had been racing 1/10 electric buggies for a couple of years, and had developed ambitions to compete at the highest level but their budgets didn't match their ambitions, so Mike was approached to provide an economic solution. At that time he was working in the Research and Development department of a successful switched mode power supply company, developing the very latest in state of the art electronics. Mike accepted the challenge and set out on a quest for knowledge. The principles of DC motor speed control had to be conquered

.....enter M-troniks.

significant advantage when decelerating quickly — as Damon Hill puts to good use in his Williams!!!

After the value for money ST600HF became known and built a reputation for solid reliability, it was time for more innovation. The SM800 introduced a new type of torque control used in conjunction with a 5KHz, super high frequency, regenerative ABS, and all of this in a much smaller package — ideal when space becomes a problem. M-troniks are very pleased with the performance of its latest model: increased run times, less commutator and brush wear and cooler running mean there will be no embarrassing stops prior to the finishing line for M-troniks drivers. The SM800 is now showing its pedigree, as an impressive run of emphatic wins in the BRCA Regionals has demonstrated.

For the beginner, M-troniks released the ST400PB in

February 1993. With a retail price of less than £50

complete with torque control, M-troniks claim that

the ST400PB is the highest performance speed controller on the market in this price bracket. M-troniks now market a range of electronic speed controllers to suit all needs and pockets, and are continuing to

invest heavily in developing technology for the future. Over the coming months M-troniks expect their reputation for reliability and performance to spread, as more top class drivers are now sitting up and taking notice of their products.

The ST400PB

The ST400PB must be looked upon as one of the few bargains to be had these days! For less than £50 the beginner can buy an electronic speed control, complete with torque limiter, that will take the driver from their first haphazard laps around the back garden to using really hot motors when more experience is gained. In fact, the ST400PB can handle motors down to the 12 turn

range without complaint, which can only be regarded as good value for money, although I suggest that 13 or 14 turn winds would be more sensible.

For the purposes of testing the review speedo, it was installed in the Editorial Cougar 2000 and given a thorough 'pasting' around the local BMX track. Fitted with an AGR 13 double, the car has might what be called ample power, which gave a lot of fun on the bankings and jumps at the track. The torque limiter worked well, so the car could be tuned to pull away as if it only had a stock motor installed, but with the limiting turned off it was back to its usual 'knee jerk' acceleration from a standing start. The ST400 didn't really warm up much during consecutive runs, so it was obviously happy with the current being drawn by the motor, and felt quite a nice speedo to drive with none of the 'on/off' switch characteristics exhibited by some of the cheaper speed controllers available.

Not being a high frequency type, I wouldn't really recommend this speed controller for use with expensive hot wind motors, but for club racing and the driver just starting out it is absolutely ideal, and all this for little more than the cost of a servo and mechanical speed control board as supplied in the majority of beginner's kits!

Specification:-

Height - 20mm.
Width - 35mm.
Length - 45mm.
Peak current - 720A.
Continuous Current - 360A.
Suitable for 4-8 cells (4.8/9.6 volts).
Brake - 60A.

The SM800HF

The SM800HF Pro is the speed controller that has lately been winning BRCA 1/10 Regionals, building up a reputation in the process of being a very 'economical' speedo, with drivers amazed at the amount of capacity left in their cells after a race. Darren Styles, to quote one example, noticed that M-troniks drivers didn't appear to slow or dump with the regularity exhibited by other makes, so he went out and bought one. Straight away, he could see that on his capacity meter his cells had upwards of 15% more left in them at the end of a race using the same motor and gearing as with his previous speed control, so the M-troniks speedo was obviously more efficient. Why is this? The answer lies in the fact that the SM800HF is a very high frequency speedo that switches the current to the motor at 5000hz and, coupled with the Synchronotorque(TM) system, the combination gives very high efficiency. When Corally brought out their MK 11 5KHz speed controller some years ago, circuit drivers revelled in the ease with which they could last for the race duration, but the controller didn't catch on with off road drivers, quite possibly because of its configuration. M-troniks' SM800HF has been aimed initially at the off road market, for which it is ideally suited, but it is also a very good buy for circuit racers due to the high frequency operation giving greater economy. For those looking for even greater efficiency, the 'Turbo' model has



The budget priced ST400PB. Very good value for money!

The launch product, the ST500PB, was designed from scratch with a specification on a par with established competition that had several years start. Offering several innovative features, such as Synchronotorque(TM), which keeps wheel spin to a minimum under rapid acceleration, M-troniks aimed to bring a new dimension to racing. The first product was taken up by local star driver Richard Isherwood who has subsequently used all M-troniks' products as they evolved, to very good effect.

Following the success of the ST500PB, and with an increasing feel for what was needed to win, M-troniks developed and released the ST600HF (reviewed in RRC's January '93 issue). This speed controller was aimed specifically at the top competition market. In addition to Synchronotorque(TM), M-troniks spent many hours pioneering an ABS system for model cars; a

TurboFets fitted, giving even less voltage drop, the figure down to 0.015v at 10A !

To test the SM800HF, the speedo was initially installed in the Associated 10LS as reviewed in this issue, and taken to a round of the RRC Tarmac Series at Ashby. The Schottky diode had been fitted to the motor as per the instruction booklet, so everything looked rosy regarding the operation of the speed controller.

What didn't look rosy was the weather, as the day had been damp after early morning rain, so the track itself was damp in parts. I hadn't ventured out in the earlier rounds (chicken!), but had a go in the last round on guesstimated tyres, the time giving me second on the grid for the Final. My initial impression was of extreme smoothness but definitely no lack of acceleration. This was borne out by the couple of spins I had when coming out of corners and hitting the power! For the Final I turned the torque limiter down a 1/4 of a turn (I couldn't check the actual setting with my DVM as the batteries had died on me) and changed tyres to PSE Yellows all round.

As the start buzzer went I took a gamble and hit the throttle fast, which would normally have seen any Pro 10 car on a slightly damp track spin round like a top, but no, the 10LS accelerated away well and indeed gave me enough traction to pull in front of the poleman and go round him on the outside of the infamous banked top bend. The problem then was could I slow the car enough to

The smooth 5khz SM800HF Pro. The case is a prototype, production examples will be smaller.



get round the following hairpin right, without the following pack using my car as a brake? This is where the ABS braking system really came into its own, because with a mighty heave of back stick the car slowed dramatically without looking at all as if it was going to spin out! A little punch across the two apexes and I was gone, going on to win comfortably. What is more, having marshalled the race following mine, I switched the car back on and did another 5 laps before the car even appeared to slow at all, so even if the motor had been geared slightly on the safe side, the speedo certainly proved to be efficient. After the meeting had finished, I experimented with the brakes, and must say that for a circuit car they are really brilliant, several times driving the wrong way down the straight into the tight hairpin by Race Control, leaving the throttle wide open until the very last second then going hard onto the brakes. Their ability to slow the car down from high speed without locking and inducing a spin is phenomenal, and has to be experienced to be

believed, so the ABS gets full marks!

Further trials included the usual off road RRC test with the Cougar at the BMX track, where the ABS certainly proved useful on the gravel surface, and a day at the RRC 2wd round at Birmingham (the less said about the result the better!). The SM800HF working as it should though, and between 22-32% always remaining in the cells after each heat, with the motor looking in really good condition. The torque limiting was turned off, and drivers commented that the car was no slouch out of the hairpins, yet it felt smooth to me. Nice!

M-troniks are looking to spread the word about their products, and to this end they are looking for up and coming drivers to sponsor. If you are looking for a good deal, write with details of your racing career to date and your aspirations for the future to M-troniks Ltd, Comtech House, Redgate Road, South Lancs Industrial Estate, Ashton in Markerfield, Wigan, Lancs. WN4 8DT.

Specification:-

Height - 20mm.

Width - 38mm (prototype case).

Length - 49mm (prototype case).

Continuous current - 350A.

Suitable for 4-8 cells (4.8/9.6 volts).

Brake - 70A.

Voltage drop at 10A - 0.025v.

No motor limit.

M-troniks speed controllers are made in England and distributed by:- Modelsport, 2, Cross Green, Otley, W. Yorks. LS21 1HD. Tel:- (0943) 466535, and No 1 Race Supplies (0274) 577451.